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ADJUSTING CORPORATION FINANCING TO INDUSTRIAL GROWTH

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For the last forty years and more Americans have been watching apprehensively the continued expansion of certain very large enterprises, which have been commonly referred to at different times as trusts, as combinations, and now as giant corporations. Much has been written about them, for the most part in a critical vein. Public sentiment has been on the whole hostile to them. Restrictive laws have been passed and enforced. In spite of all, they have gone on expanding. Moreover, during the twenty years, 1909–29, their rate of growth more than doubled. No wonder they excite alarm.

However, before we rush out to attack them it may be well to look at their record and prospects from all sides. Are the giants really as powerful as they appear? Will their numbers increase? Will they keep on getting bigger and bigger until other types of enterprise are almost exterminated? These questions have been asked many times during the last forty years—and many answers have been offered. As new conditions arise, answers formerly accepted become less and less satisfying. At intervals the situation as a whole calls for re-examination. The present seems to be one

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of these suitable times to review whatever fresh evidence has accumulated and to revise our conclusions accordingly.

Earlier this year some quite definite answers were presented in a widely read book on *The Modern Corporation and Private Property* by Messrs. Adolf A. Berle, Jr., and Gardiner C. Means.[2] It is a thoughtful and stimulating book. Especially useful are the authors' estimates of the proportions of wealth and income controlled by giant corporations—estimates derived from ingenious correlations of data contained in corporate financial reports with data furnished by corporate income-tax statistics. These estimates, as the authors take pains to explain, are only rough approximations. Nevertheless, they are entitled in my judgment to respect and tentative acceptance. Some of the authors' assumptions and opinions, however, seem to me open to serious doubts.

In order to measure the relative importance of large enterprises, Berle and Means have compiled a list of the two hundred largest non-banking corporations and of their gross assets and net incomes over a period of years. Their aggregate wealth (gross assets) at the end of 1929 is computed to be 49 per cent of the wealth of all non-financial business corporations, and about 38 per cent of the wealth of all business concerns, both incorporated and unincorporated, in the United States.

These ratios are startling, and I have no desire to minimize their significance. To interpret them fairly, however, calls for a little further analysis than is offered by Berle and Means. By carrying their procedure one more step, it is practicable to allocate the two hundred largest corporations to classifications roughly corresponding to those used in reporting corporate income-tax statistics. Thus we may form a clearer picture of the situation in a number of different fields. Table I presents the results.

The table makes plain a point which deserves emphasis at the outset, namely: *Concentration of business into the hands of a few super-corporations, far from being a universal tendency, is characteristic only of certain limited fields.* If finer subdivisions could

[2] *The Modern Corporation and Private Property.* New York: Macmillan Co., 1933.

be made, the truth of this observation would stand out even more clearly. Great areas of American industry have been little affected. Not for lack of effort. Anyone familiar with a wide range of activities will testify that the desire to grow to maximum size

TABLE I

ANALYSIS OF DEGREE OF CONCENTRATION OF NON-FINANCIAL CORPORATE ASSETS

(By Major Groups)

	All Non-Financial Corps. (Billions of Dollars)	200 Largest Non-Financial Corps. (Billions of Dollars)	Percentage Held by 200 Largest
Section A: Total Corporate Assets	165.0	81.1	49.2
Transportation and Public Utilities	64.0	51.4	80.3
Industry and Trade	101.0	29.7	29.4
Section B: Analysis of Industry and Trade	101.0	29.7	29.4
Agriculture and Related Industries	1.8	.....	0.0
Construction	3.1	.1	3.2
Trade	19.2	1.4	7.3
Service, Amusements	6.8	.9	13.2
Coal Mining	3.8	.7	18.4
Manufacturing and Mining (combined)	66.3	26.0	39.2
Section C: Analysis of Manufacturing and Mining (combined)	66.3	26.0	39.2
Food Products, Tobacco, Beverages	8.6	2.6	30.2
Textiles and Textile Products	6.0	.1	1.7
Chemicals and Allied Substances (Includes Petroleum)	13.7	10.0	73.0
Metal Products and Processes	21.9	11.2	51.2
Lumber and Wood	3.4	.1	2.9
Leather and Leather Products	1.1	.1	9.1
Rubber and Related Products	1.2	.9	75.0
Stone, Clay, Glass and Products	3.4	.1	3.0
Paper and Pulp Products	2.0	.9	45.0
Printing and Publishing	2.5	.....	0.0
Misc. Manufacturing	2.5	.....	0.0

and the ambition to promote combinations are strong motives in all lines of business. It must be, then, that conditions in some lines are favorable, in other lines are distinctly unfavorable, to business enterprises conducted on the scale of the two hundred largest corporations.

The favorable conditions stand out clearly when we inspect another grouping of the two hundred corporations:

94 out of the 200 are railroads or other public utilities.
44 are industrials primarily engaged in making producers' commodities.
62 are industrials primarily engaged in making and/or distributing consumers' commodities or services.

Those in the first group are almost compelled by the nature of public services to operate on a large scale; and their operations are standardized to a high degree. Those in the second group, with three or four possible exceptions, turn out products which require extra heavy capital investment in order to get down to a low-cost basis. All those in the third group with one exception—and that exception a failure—enjoy nation-wide distribution of commodities or services for which there is an enormous popular demand. The industrial companies in both the second and third groups are essentially mass-production undertakings; this is plainly the prime condition favorable to the development of industrial giants.

It is of interest, therefore, to inquire whether the opportunities for extension of mass-production methods have been broadening more rapidly than other kinds of industrial opportunities. As one objective test designed to throw light on the question, though it is obviously not conclusive, I have made use of a "representative list of products actually being made by mass production in the United States" included in the American Monograph, *Mass Production*, prepared for the Washington meeting of the International Chamber of Commerce in 1931. Not less than 75 per cent of the items in this comprehensive list are among the products of the 106 industrial companies in the Berle-Means roll of giant corporations; the other 25 per cent are products of companies only a little smaller than those in the Berle-Means group. On the face of this showing, it does not appear that many openings for developing big industrial enterprises have been passed by. Further, I have had a compilation made of the values of output of all the items in the list just referred to which are identifiable in the *Censuses of Manufacturing* of 1923 and of 1929. The result is an estimate that the percentages of articles suitable for mass production in relation to total manufacturing output were: in 1923, 33

per cent; in 1929, 34 per cent. So far as can be ascertained from this rough calculation, then, the industrial area well adapted to large-scale undertakings has been growing at about the same rate as other industry.

When we piece together the indications set forth in the three preceding paragraphs we see them pointing toward certain definite findings. First, the development of very large corporations has been restricted, with few exceptions, to limited fields. Second, the common characteristic of all these fields is their adaptability to mass operations. Third, large corporations already occupy all the industrial fields well adapted to mass production. Fourth, the ratio of mass-production goods to total manufacturing production has remained fairly constant. If these findings are accepted, it follows that the growth of non-financial "big business" should normally be no faster than the growth of industry as a whole.

But the conclusion just stated appears inconsistent with one of the major findings of Berle and Means, namely, that the annual rate of growth of the 200 giant corporations, particularly in the post-war period, has far exceeded the annual rate of growth of the whole body of non-financial corporations. The inconsistency demands an explanation.

Chart I graphs the Berle-Means estimates of corporate wealth during the twenty years, 1909–29, as tabulated on page 36 of their book. The striking feature of the chart is the rapid and accelerating upward sweep of the line representing the growth of the 200 giants; in comparison, the curve of growth of all non-financial corporations shows only a gentle upward trend.

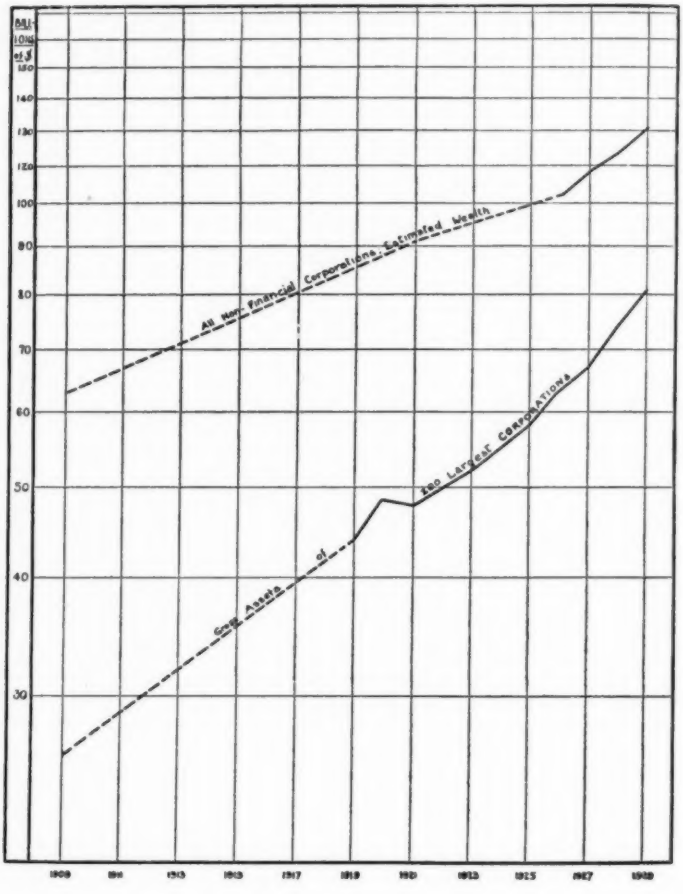
Berle and Means give their interpretation of the facts in the following passage which has attracted much attention:

> If the wealth of the large corporations and that of all corporations should each continue to increase for the next twenty years at its average annual rate for the twenty years from 1909 to 1929, 70 per cent of all corporate activity would be carried on by two hundred corporations by 1950. If the more rapid rates of growth from 1924 to 1929 were maintained for the next twenty years 85 per cent of corporate wealth would be held by two hundred huge units. It would take only forty years at the 1909–1929 rates or only thirty years at the 1924–1929 rates for all corporate activity and practically all industrial activity to be absorbed by two hundred giant companies (p. 40).

CHART I

GROWTH OF GROSS ASSETS—ALL CORPORATIONS AND 200 LARGEST

(Computed from Berle and Means, Table III, p. 38.)



This last-quoted sentence might be taken as a *reductio ad absurdum* but is not apparently so intended. In other passages the qualifying "if" is forgotten, and we read such positive statements as:

> The huge corporation . . . . has come to dominate most major industries if not all industry in the United States. . . . . It is coming more and more to be the industrial unit with which American economic, social, and political life must deal (p. 44).
>
> Such is the character of the corporate system—dynamic, constantly building itself into greater aggregates, and thereby changing the basic conditions which the thinking of the past has assumed (p. 46).
>
> Were it possible to say that circumstances had established the concentration, but that there was no basis to form an opinion as to whether the process would continue, the whole problem might be simplified. But this is not the case. So far as can be seen, every element which favored concentration still exists (p. 18).

These flat assertions are of the utmost importance if true. They are statements of the underlying thesis of the entire book. They are put forward, and are even winning some degree of acceptance, in the guise of indisputable truths constituting safe foundations for "new concepts" and legislative experiments.

Yet a careful search of the Berle-Means study has failed to bring to light a single shred of evidence or a solitary fragment of analysis to back up the view that further concentration during the next few years is a reasonable probability—not to speak of its being a demonstrated theorem. We are handed an interesting record, which reveals a very strong trend toward concentration rising to an unprecedented height in 1929, unaccompanied by any coherent account of its causes; and we are invited to assume that the trend is bound to continue. The assumption, I believe, should be decisively challenged as contrary to facts and to common sense.

Reasons have already been given in this paper for the judgment that giant corporations have entered all the fields in which conditions favor their successful operation. This is not, of course, a novel idea. To the contrary, it has been advanced many times in the past forty years. Each time the big-business movement has subsequently made further progress; and in so doing has entered new fields. Since the war, however, the process of opening up new

fields has been quite definitely checked. This form of expansion may now be considered, I believe, practically ended.

Out of the Berle-Means list of two hundred, one hundred and fifty have been on the list since 1919. About half of those removed have merged with other companies on the list. The rest have lost their places in most cases merely by slipping back more or less; in only five cases by breaking up. Of the fifty additions to the list since 1919, as nearly as I can identify them, more than half are primarily holding companies in fields previously occupied by large enterprises. Most of the rest were large in 1919 but have since expanded sufficiently to get into the list. Four motion picture companies, two dairy product companies, and three chain store companies may be said, though somewhat doubtfully, to have opened up fresh fields for large-scale business. Only one company, Radio Corporation of America, has engaged on a large scale in a new line of industry. One can find little in this record to sustain a belief that the institution of the giant corporation is on its way toward conquering all fields of industry. It would be much nearer the truth to say that by 1919, or probably earlier, its major fields had been occupied; and only minor advances into additional fields have since been made.

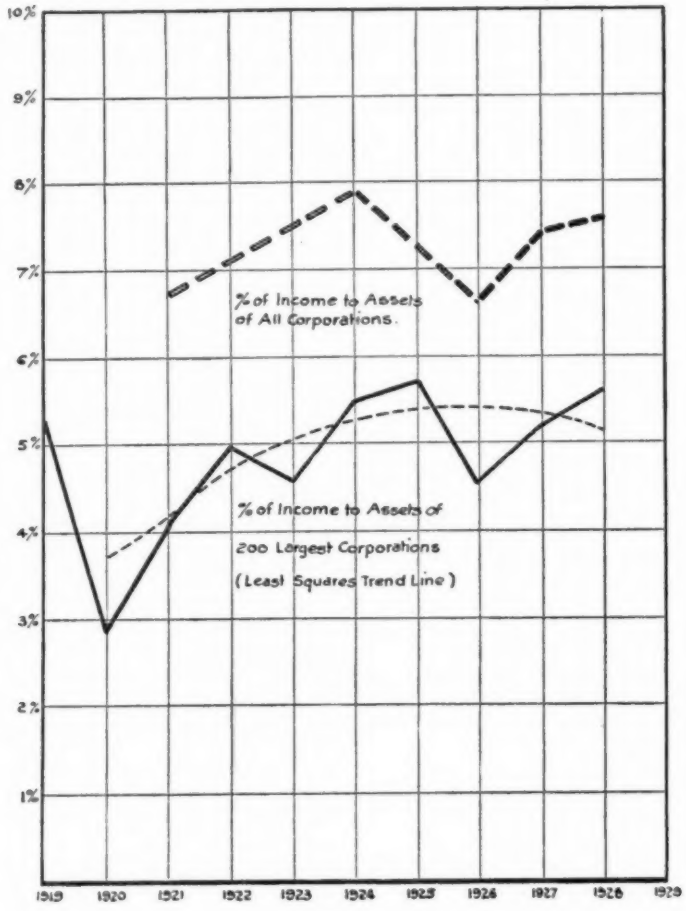
Another possibility, however, remains. Perhaps the giant corporations will go on expanding indefinitely inside their chosen fields. Again, the scholarly researches of Berle and Means supply useful data for exploring this suggestion. Chart II represents the percentages of their estimates of net income to their estimates of wealth for the years 1920 to 1929, inclusive, of (*a*) the 200 giants and (*b*) all non-financial corporations. Apparently, the earning power of the giants was markedly less than that of all corporations combined—rather a surprising conclusion, yet in line with other findings. In the early years of the period charted the earnings of the 200 giants were increasing faster than their assets, whereas from 1925 to 1928 income was gaining at a perceptibly lower rate than assets. Allowing for unavoidable inaccuracies in the computations, it looks very much as if the giants had expanded by 1925 or thereabouts to the full limits they could reach without cutting down their ratio of profits to investment. The law of diminishing returns held them firmly in its coils. No doubt numerous excep-

tions to so general an observation could be taken. For the 200 group as a whole, however, it appears to hold good.

CHART II

RELATION OF NET INCOME TO GROSS ASSETS—ALL CORPORATIONS AND 200 LARGEST

(Computed from Berle and Means, Tables III and IV, pp. 36–37.)



Well worth noting, also, is another estimate of Berle and Means, namely, that the net income of the 800 corporations ranking next in size to the largest 200 was almost uniformly about 19 per cent of the total net income of all non-financial corporations from 1920 to 1929, inclusive. These 800 companies, therefore, expanded their operations at approximately the same rate as business in general. So far as earning power from operations was concerned, they were on a par. Now it seems incredible that any marked advantage in earning power enjoyed by the largest corporations would have stopped short at an arbitrary line. Even though some hypothetical advantage might have pertained mainly to very large concerns, surely it would have had some perceptible influence on the next largest. I infer from the record of the 800, therefore, that the 200 were not being driven ahead by any exceptional earning capacity.

The giant corporations, to summarize, have long been active in nearly all the industrial terrain fit for large-scale operations; and no unopened territory for them is now in sight. They have not found it possible to expand at a better-than-average rate without incurring the penalty of a declining ratio of earnings. The latent supposition that the larger the enterprise, the better is its chance to make profits, gets no support, even from Berle and Means' own figures. How can one reasonably assume, in the presence of these facts, that big business will keep on growing faster than total business grows? Whoever makes the assumption should at least be prepared to point out ample opportunities for big-scale expansion at a profit. I do not believe he can find them.

Nevertheless, it is true that giant corporations did grow bigger and bigger, faster and faster, throughout the twenty-year period ended with 1929; and we still have to discover why.

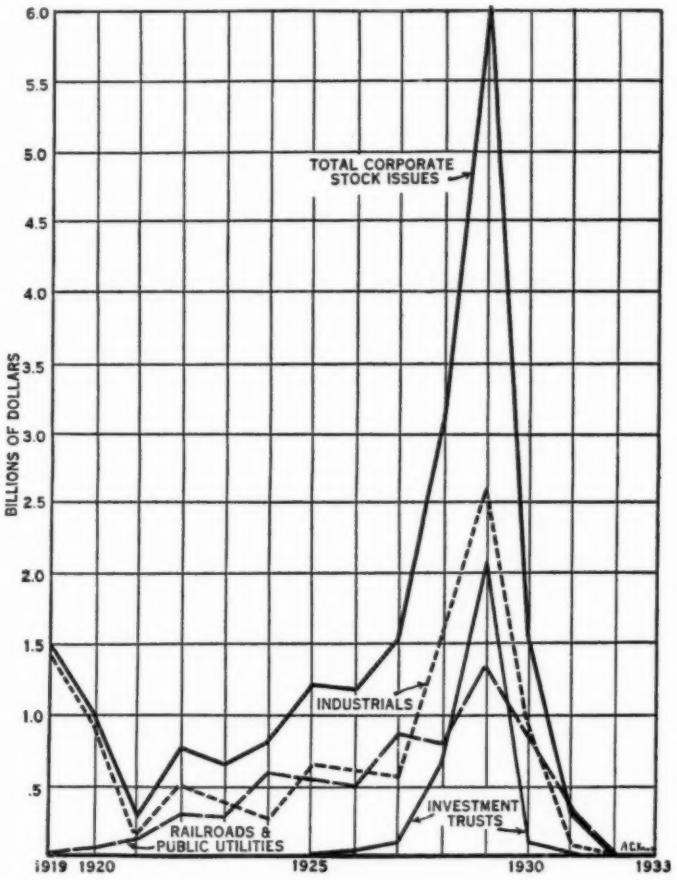
The puzzle is not hard to solve. Chart III makes plain (*a*) the enormous volume of money devoted to the purchase of new capital issues of business corporations; (*b*) the extraordinary rise of the total volume to its peak in 1929; and (*c*) the shifting position of the different types of securities. The golden flow irrigated first one favored group of industries, then another. This last characteristic should have especial attention.

The after-war decline in popularity of railroad securities and other established lines of investment, in association with the very wide diffusion of money available for security purchases—much of it in the hands of persons utterly incompetent to judge securi-

CHART III

NEW CORPORATE STOCK ISSUES, 1919–33

(Source: *Commercial and Financial Chronicle.*)



ties—left the door open to all kinds of fads and fashions. The insane rush of capital into investment trusts depicted on the chart is but one example of the workings of financial mob fever. As the boom went on, cool-headed analysis was more and more severely relegated to a backroom. Buyers of securities were satisfied with "good names." The larger the number who felt that way, the higher went the prices of "good name" stocks and bonds, thus adding the final touch of proof needed to squelch all skeptics and scoffers. Naturally, the greatest favorites were the largest and best-known companies—for the most part, the very companies in the Berle-Means list of 200. As indications of the magnetic power to attract capital exercised by these corporations, consider the following:

> From 1922 to 1927, inclusive, according to Berle and Means, the 200 largest corporations put out more than two-thirds of all the non-financial corporate securities publicly offered (p. 361).
>
> During the same period approximately 55 per cent of the growth of assets of the 200 largest corporations was ascribable to the sale of new securities (p. 43).
>
> Out of 573 independent American corporations whose securities were actively traded in on the New York Stock Exchange, 130 reported assets of over $100,000,000; and these 130 controlled 81.7 per cent of the assets of the entire list of 573 (p. 27).
>
> The investment trusts, so-called, far from diversifying their purchases over a wide range, tended to intensify the concentration. A survey of the portfolios of the leading "fixed trusts," made in 1931 by R. G. Dun & Co., shows that an overwhelming majority of their holdings consisted of seventeen popular issues of big companies.

It is unnecessary to develop the point further, because everyone familiar with the financial practice of the boom years will agree that the "blue chip" companies could easily get all the capital they needed; in fact, they were under strong temptation to accept more than they needed.

From the viewpoint of the individual company the money was presumably well used. The United States Steel Corporation and other companies retired outstanding indebtedness. Much of the money went into plant improvements which cut costs. In other instances distributing organizations were enlarged. In still others competitive concerns were brought into the fold. Most well-

managed companies got themselves into a more liquid position. A comparative, composite balance sheet of 463 leading corporations compiled by Standard Statistics Company shows that between the end of 1927 and the end of 1929 they increased their aggregate common stock and surplus account by some 4 billions of dollars. About two-thirds of this sum went into fixed assets; about one-third, into working capital. On the surface there is no evidence of impropriety or bad judgment.

From a broader viewpoint, however, the effects were unfortunate. Billions of cash placed in call loans played a heavy rôle in stock-market inflation. Vastly more harmful, however, in its ultimate consequences, was the employment of fresh capital to enlarge the plants and operations of giant enterprises in fields already fully cultivated. Think of the unbridled expansion that occurred everywhere—in oil, coal, copper, steel, motion pictures, automobiles, chain stores, paper, electrical equipment. Each company felt itself compelled to push ahead under the spur of direct or indirect competition. Even when the outlook for increased profits proportionate to the increase of investments was unpromising so sordid a consideration did not always outweigh the "strategy of domination." All the larger companies either had ample capital funds or could easily obtain them. So far as the giants were concerned, therefore, this normal limitation had very slight influence.

I do not wish to exaggerate. Many executives of big companies calculated prospective profits as shrewdly as ever and kept their more optimistic associates in leash. Other big companies have imposed on themselves a self-denying policy which forbids their grasping for more than a moderate share of the business in their line. It seems fair to say, however, that in the majority of cases the man at the steering wheel was intent mainly on driving ahead at top speed. There may have been some talk about costs and profits; but it was heard chiefly in the form of mutterings from back-seat drivers. No wonder the previously cited ratio of net income to gross assets of the 200 giants began to move downward!

We arrive, then, at a conclusion which is the chief thesis of this paper: The expansion of giant corporations in recent years has

been motivated only in part by the search for profits; more strongly and persistently by an urge to use easily available capital resources to win or hold a dominating position. Put in other terms, the hormones of growth of concerns big enough to attract fresh money on a huge scale are furnished by financial glands, so to speak; they differ in their inmost nature from the hormones of growth of everyday enterprises, which are constantly trying to make as large profits as possible with the minimum use of capital. Stated in still another way, the financing of large corporations, instead of being the servant of industrial growth, has acted the part of the master.

I can think of no other plausible explanation for the astonishing development of giant undertakings in the face of a declining ratio of profits. It seems to fit all the facts as nothing else does. It may guide our thinking toward a reasonable forecast.

If it be granted that giant business has about equal opportunities with smaller-scale business to expand on a strict profit-making basis, then the question whether it will actually expand during the next few years at a higher rate must be decided mainly by the probable character of corporation financing. Will future financing of giant business be attracted chiefly by the prospect of corporate profits or chiefly by the prospect of speculative profits to the individual holder? Will capital funds be desired chiefly for building up corporate profits or chiefly for promoting the interests of directors and managers at the expense of stockholders?

Berle and Means make much of the latter possibility. They present data to justify estimates of 18,000,000 separate stockholdings in the hands of 4,000,000 to 7,000,000 persons (p. 375). They stress the indisputable fact that scattered stockholders in practice have little to do with the selection of directors. They establish the point that the interests of a self-seeking minority management may diverge widely from the interests of their stockholders. All this makes a good prima facie case; but not fully convincing. It fails, in my judgment, to allow adequately for two offsetting factors.

First, the chance that better protective measures for the benefit

of stockholders may be instituted; some of them are discussed at the end of this paper.

Second, the reasonable hope that corporate directors and managers may enforce more vigorously among themselves commonly accepted standards of responsibility and ethics. Even as it is, these standards are generally observed and constitute the stockholders' most powerful protection. Their actual and potential influence should not be lightly discounted.

The relative weights of managerial interests and of stockholders' interests in guiding corporate activities cannot be accurately determined. Whatever the weights may have been in recent years, no sound reason has been given for assuming that managerial interests will count more heavily in the period just ahead. The contrary assumption appears at least as well gounded.

To come back now to the query whether future purchasers of corporate securities will hanker after big names and quick resale profits on the strength of the names; or whether they will perchance take a longer-range view and be attracted more largely by the prospect of corporate earnings: I submit that purchasers of securities, for a few years to come, will probably be more farsighted than they were in 1924–29.

Such an expectation implies: (*a*) that purchasers will devote increased attention to financial statements and less to sweeping claims and hints; (*b*) that they will give thought not only to past performances but also to the outlook for earnings; (*c*) that they will value reliable information and advice. Lest the picture may seem althogether too rosy, let me explain that I am not looking forward to an intellectual renaissance among security buyers. I am merely placing some limited faith in the restraining influence of burnt fingers. After all, the speculative frenzy of 1924 to 1929 was an unusual phenomenon. It seems unlikely that it will be immediately repeated.

As Chart I shows, it was during these years 1924–29 that the rate of growth of the 200 giants far exceeded the rate of growth of other corporations. We have found reasons to believe that this was more than a coincidence. It was the working of cause and

effect—undiscriminating eagerness to buy the securities of big companies being the cause; highly stimulated expansion of big companies, the effect. If the eagerness slackens, its effect will tend to disappear. Big business in that event may be expected to go ahead, but only at the same jogtrot pace as other business.

Other factors, however, may further slow down the progress of corporate giants. Once an enterprise has overexpanded, its whole structure is weakened. It is fortunate if it can simply remain quiescent until the rest of the world catches up with it. Quite possibly, for this reason alone, the 200 giants will grow for several years at a rate well below the average rate of growth of smaller companies.

Furthermore, economic conditions are becoming less and less favorable to large organizations. Changes are taking place with increasing rapidity. Fluctuations tend to be steeper and more sudden. Improvements in production technique follow one another with bewildering speed. Product designs and features are altered overnight. Consumers' demands swing violently from one style or brand to something slightly different. A business concern to prosper under such conditions must be alert, quick-stepping, adjustable; it must be instantly responsive to the control of one man or of a closely-knit group. The cumbersome machinery of a far-flung organization is not well fitted to this kind of economic environment. Its widely separated departments, each pursuing its own course; its internal politics; its higher executives out of touch with their markets; its succession of expensive conferences unable to make decisions: these are only a few of its handicaps. True, neither the conditions nor the handicaps are unfamiliar; and in spite of them big business has so far held its own. But today the outlook is for an intensification of unfavorable conditions which will make the handicaps more oppressive. All these considerations point toward a forecast that the typical successful concern of the 1940's will be less gigantic than its counterpart of the 1920's.

However, the corporation as an instrument for raising capital through public offerings of securities is by no means obsolescent. Though it may not be used as freely as in the recent past to finance

the further expansion of giants, it will doubtless serve other types of corporate enterprises. The problem of safeguarding the interests of stockholders against the divergent interests of minority management remains. The associated problem of keeping new capital investment as closely related as possible to prospective business profits is even more important. The closer the tie-up, the better will corporation financing be adjusted to industrial growth; the less will be the danger of diverting investment away from profits into overcapacities and foolishly ambitious schemes. Economic health demands solutions of these two problems.

Without attempting to enter into details, I venture to suggest three practical improvements in the handling of financial relations which would go far toward providing solutions. None of them calls for legislation. All are adapted from English practice.

The first improvement would be to promote the custom of setting up openly, and with full disclosure to all stockholders and other persons concerned, provisions for substantial profit-sharing by directors, officers, and perhaps major employees. The result would be to create a greater harmony of interest between management and stockholders. It would clarify and strengthen, also, the ethical responsibilities of management, for it would remove any shadow of excuse for treating stockholders inconsiderately. It would take only a short time to get the custom well established if a few well-known companies were to take the lead. Think how rapidly no-par-stock spread through corporate practice, once it won acceptance as the correct thing.

Second, it would be a great improvement to have auditors selected by some body independent of the management—preferably, of course, by stockholders. However, if that cannot be arranged, then the New York Stock Exchange would not only perform a public service but would rebuild confidence in itself and in its transactions by accepting the responsibility. Under the future conditions sketched a few paragraphs above, auditing and certifying financial statements will involve unbiased, broad-gauged judgment to an even greater degree than is true today. The anomaly of letting the management choose the men to review its own judgments should be discontinued.

Third, it might prove both helpful and profitable for one or more of the leading investment trusts to assume openly the task of representing the entire body of stockholders in the companies in which the trust has a considerable interest. The benefit to the stockholders is obvious. The benefit to the trust, apart from better protecting its own stake, would take the form of valuable good will.

To summarize: One of our vital economic weaknesses in recent years seems to have been a failure of security purchasers to pay adequate attention to corporate profits. For that reason, corporation financing was badly adjusted to the actual requirements of industrial growth. The poor adjustment is the underlying explanation of the overdevelopment of giant corporations beyond the limits of sound, profit-making business.

The evils arising from divergences of interest between stockholders and management are merely incidental effects. We should give more thought, I believe, to the ailment than to its symptoms.

When a long-standing ailment shows clear signs of beginning to cure itself, as seems to me true in this instance, good sense suggests that it is well to permit the cure to go on undisturbed. Busybodies who continue to probe and administer pills are liable to cause a serious setback in the healing process. It would be better to do nothing than to try experiments on the patient's exhausted frame. If this be an expression of the treasonable doctrine of laissez faire, make the most of it.

PROFITS AND LOSSES IN THE STORAGE OF BUTTER

EDWARD A. DUDDY AND DAVID A. REVZAN[1]

THE problem is to determine those periods during which butter held in storage shows the greatest net profit to the owner. By a study of the possible financial results of storage for a period of years it was thought that some average tendency for certain periods to show more favorable results than others might be revealed. The study has been undertaken partly with the idea that the findings might be of some value to those in the trade, either as a guide to storage operations or, more likely, as a basis for comparing actual performance with the potential profits and losses which were realizable under the prevailing price and cost conditions.

Chicago market conditions were taken as typical of the storage butter market generally. The price data, which relate only to the Chicago market, were obtained from the Chicago office of the Market News Service of the United States Department of Agriculture. Cash prices are those of 90-score centralized butter in car lots; futures prices are those made on the Chicago Mercantile Exchange and reported by the Market News Service. Daily price quotations were averaged to make weekly averages.

The price per pound was converted to a car-lot price on the basis of 18,900 pounds to the car. The cash price of July and August butter was adjusted for a difference in quality to the price of May and June butter by deducting ½ cent from the net profit or adding ½ cent to the net loss of July and August butter in reporting the financial results of storage operations.

Butter moves into storage in quantity during the months of May, June, July, and August. The out-of-storage movements begin in September and extend through February. Over the eleven-year period, 1922–23 to 1932–33, the financial results of storage

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operations are reported for storage years, the year beginning with May and ending with February.

The method of determining the net possible profit or loss for each and every possible combination of weeks was as follows: From the weekly average cash prices a price difference for each weekly storage period combination was determined by subtracting from the price at which the stored butter was sold, the price at which it moved into storage. These price differences per pound were converted to a car-lot basis by multiplying by 18,900. From these price differences on a car-lot basis were subtracted all the costs of storage,[2] taking full account of the different length of time in storage for each weekly combination. The result was the net possible profit or loss per car for the storage period indicated. Average profits or losses for each week of the storage season were determined by averaging the results obtained by charging the butter into storage in a particular week during May, June, July, and August, and charging it out in all possible weeks of September, October, November, December, January, and February. An average of these weekly averages gave the average performance for the year.

Table I summarizes the results obtained from this analysis of the price and cost data. It will be noted that years of large average profit tend to be followed by years of loss or of nominal profit. The range of profits and losses within a single year is extremely wide. This is to be expected in a market in which the seasonal price movement fluctuates widely. The character of the year from a profit standpoint is indicated not only by the possible financial

[2] Inspection charge, $5.00 per car; weight certificate, $4.50 per car; brokerage charges, $47.25 per car for purchase and an equivalent amount for sale. An interest charge of 6 per cent was allowed on the full purchase price of the butter. It is the practice of warehouses to lend to the merchant-speculator a large per cent of the value of the butter at this rate. Since the margin on which the warehouse is willing to lend varies, it was simpler to allow 6 per cent on the full amount of the investment as a cost of storage. Storage charges were assessed at 25 cents per hundred pounds for the first month, with 12½ cents per hundred pounds for each succeeding month. These rates were paid by the majority of firms storing butter. Insurance was charged at 2 cents per hundred dollars of value per month. Interest and insurance charges varied with the value of the butter. No allowance was made for margin cost in figuring the cost of hedging operations.

TABLE I

SUMMARY OF FINANCIAL RESULTS OF BUTTER STORAGE AT CHICAGO, 1922–23 TO 1932–33

(In Dollars per Car)

Year	Average Profit or Loss	Range of Profits and Losses	Period of Maximum Profits or Minimum Losses		Period of Minimum Profits or Maximum Losses		Profit Combinations	Loss Combinations	Total Combinations
			"In"	"Out"	"In"	"Out"			
1922–23	$ 1,533	$− 776 to $3,478	Aug. 12	Feb. 24	July 1	Sept. 2*	387	35	422
1923–24	1,082	− 147 to 2,328	July 7	Jan. 12	May 12	Sept. 8	434	5	439
1924–25	− 349	−1,469 to 1,408	Aug. 9	Nov. 29	July 12*	Sept. 27* Oct. 25*	111	337	448
1925–26	125	− 849 to 1,411	May 23	Oct. 17	July 25*	Feb. 13*	262	160	422
1926–27	705	− 218 to 1,660	July 31	Feb. 19	May 22*	Sept. 4 to 11*	392	30	422
1927–28	443	− 503 to 1,256	Aug. 6	Dec. 17–24	May 7	Sept. 3*	381	41	422
1928–29	174	− 541 to 679	June 16	Dec. 8	Aug. 18 to 25*	Jan. 19*	313	104	417
1929–30	−1,093	−2,570 to 313	July 13 to 20*	Sept. 21 to 28	May 4*	Feb. 28*	36	408	444
1930–31	−1,111	−3,128 to 949	June 14*	Sept. 20	Aug. 30*	Feb. 7*	83	365	448
1931–32	101	−1,778 to 1,956	June 20	Oct. 17	Aug. 22*	Feb. 6*	239	183	422
1932–33	90	−1,187 to 1,044	June 25	Dec. 3	Aug. 13*	Feb. 4*	259	163	422
Totals or Average	142	.....	.....	.....	.....	.....	2,897	1,831	4,728

* = Losses.

results, but by the preponderance of possible profit or loss combinations of weekly storage periods. The dates of most favorable, or least favorable, weekly storage period, indicate the week ending on the date given.

A single period showing maximum potential profits or maximum loss is not enough to indicate a prevailing tendency. Therefore, those periods giving the best financial results within a rank of 1 to 5 are shown in Table II. The selection of these periods is based on weekly averages of realizable profits or losses for the eleven years. In the case of loss years, the rank of 1 indicates minimum loss, a rank of 5 a correspondingly heavier loss. In Table III, the least favorable storage periods within the rank of 1 to 5 are indicated. Here the rank of 1 indicates heaviest loss.

The above tables are frequency tables which show the prevailing tendency for certain weeks of the in- and out-storage movement in the various months of the year to appear in a favorable or unfavorable relation to profits or minimum losses. A rating of Table II, giving a weight of 5 for the first rank, 4 for second, 3 for third, 2 for fourth, 1 for fifth rank, shows that for the eleven-year period, on the movement into storage, weeks in July occurred most frequently in the most favorable position with respect to profit or minimum loss possibilities. Weeks in May ranked second, August third, and June fourth. For the out-movement, weeks in December ranked first in frequency, October second, September third, November fourth, February fifth, and January sixth, in order.

A rating of Table III for the months of the in-movement for the eleven-year period shows July with the most frequent occurrence of weeks in which heavy losses took place, followed in order by May, August, and June. For the movement out of storage the months in which heaviest losses occurred were September, followed by February, January, and October. Heavy losses do not occur within the above range in either November or December.

A more direct rating of the months of the storage season is obtained by using a monthly average profit or loss made up from the weekly averages for each of the in and out months. The month having the largest potential profit is given the rank of "1," the

TABLE II

THE FIVE MOST FAVORABLE STORAGE PERIODS, 1922–33, BASED ON AVERAGE WEEKLY POTENTIAL PROFITS OR LOSSES*
(Rating Scale, 1–5)

YEAR	NATURE OF FINANCIAL RETURNS	1		2		3		4		5	
		In	Out	In	Out	In	Out	In	Out	In	Out
1922–23.....	Profit Year	Aug. 12	Feb. 24	Aug. 5	Dec. 16	Aug. 26	Dec. 2	Aug. 19	Dec. 23	July 29	Jan. 13
1923–24.....	Profit Year	July 7	Jan. 12	July 14	Jan. 19	July 21	Jan. 5	June 30	Jan. 26	June 22	Dec. 8
1924–25.....	Loss Year	Aug. 9	Nov. 29	Aug. 16	Dec. 6	Aug. 30	Nov. 22	Aug. 2	Feb. 28	Aug. 23	Jan. 3
1925–26.....	Mixed Profit and Loss Year	May 23	Oct. 17	May 16	Oct. 10	May 9	Oct. 3	June 20	Sept. 26	Aug. 15	Oct. 24
1926–27.....	Profits	July 31	Feb. 19	Aug. 7	Feb. 26	June 19	Dec. 18	July 17	Jan. 1	June 26	Feb. 5
1927–28.....	Profits	Aug. 6	Dec. 17	Aug. 20	Dec. 24	Aug. 13	Dec. 31	July 30	Dec. 10	Aug. 27	Jan. 7
1928–29.....	Mixed Profit and Loss Year	June 16	Dec. 8	June 23	Dec. 22	June 30	Feb. 16	June 9	Sept. 8	July 1	Nov. 24 Dec. 5
1929–30.....	Losses	July 20	Sept. 28	July 13	Sept. 21	July 6	Oct. 12	June 1	Oct. 5	June 29	Sept. 14
1930–31.....	Losses	June 14	Sept. 20	May 31	Sept. 6	June 7	Sept. 13	June 21	Sept. 27	June 28	Oct. 7
1931–32.....	Mixed Profits and Losses	June 20	Oct. 17	June 13	Oct. 10	May 9	Oct. 3	May 16	Sept. 26	May 23	Sept. 12 Oct. 24
1932–33.....	Mixed Profits and Losses	June 25	Dec. 3	July 12	Nov. 26	June 18	Dec. 17	June 4	Dec. 10	June 11	Nov. 19

* In the case of a loss year, the rank of 1 indicates the least potential loss.

TABLE III

THE FIVE LEAST FAVORABLE STORAGE PERIODS, 1922–33, BASED ON AVERAGE WEEKLY POTENTIAL PROFITS OR LOSSES*
(Rating Scale, 1–5)

YEAR	NATURE OF FINANCIAL RETURNS	1		2		3		4		5	
		In	Out	In	Out	In	Out	In	Out	In	Out
1922–23.....	Profits	July 1	Sept. 2	July 18	Sept. 16	June 24	Sept. 9	June 10	Sept. 23	June 17	Sept. 30
1923–24.....	Profits	May 12	Sept. 8	Aug. 18	Sept. 1	May 5	Oct. 13	Aug. 25	Sept. 29	May 19	Oct. 20
1924–25.....	Losses	July 12	Sept. 28	June 14	Oct. 4	July 5	Oct. 11	{June 21 June 28}	Oct. 18	June 7	Sept. 20
1925–26.....	Mixed Profits and Losses	July 25	Feb. 13	June 6	Jan. 16	Aug. 8	Feb. 20	July 18	Feb. 27	Aug. 1	Jan. 23
1926–27.....	Profits	May 22	Sept. 4	May 29	Sept. 11	June 12	Oct. 16	June 5	Sept. 25	May 15	Sept. 18
1927–28.....	Profits	May 7	Sept. 3	May 14	Sept. 10	May 28	Sept. 17	May 21	Sept. 24	June 4	Oct. 29
1928–29.....	Mixed Profits and Losses	Aug. 18	Jan. 19	Aug. 25	{Oct. 13 Oct. 20}	Aug. 11	Jan. 12	July 21	Jan. 26	{July 14 May 19}	Oct. 27
1929–30.....	Losses	May 14	Feb. 28	Aug. 3	Jan. 18	Aug. 17	Jan. 11	Aug. 10	Feb. 22	Aug. 31	Feb. 8
1930–31.....	Losses	Aug. 30	Feb. 7	Aug. 23	Feb. 14	Aug. 16	Jan. 17	Aug. 9	Feb. 21	Aug. 2	{Jan. 3 Jan. 24}
1931–32.....	Mixed Profits and Losses	Aug. 22	Feb. 6	Aug. 15	Feb. 13	Aug. 29	Jan. 30	Aug. 8	Feb. 27	Aug. 1	Feb. 20
1932–33.....	Mixed Profits and Losses	Aug. 13	Feb. 4	Aug. 6	Jan. 28	Aug. 27	Feb. 25	Aug. 20	Feb. 11	July 30	Jan. 25

* The rank of 1 indicates least potential profit in a profit year and maximum loss in a loss year.

next largest "2," etc. To obtain an average ranking for the eleven-year period of summation of the ranks for the several years is taken for each month, the month having the lowest summation of ranks being given an average rank of "1." This rank of "1" indicates that the butter stored during this month has the best chance of making a profit on the average of the performance for the eleven-year period. Rankings for the different months on the above basis are shown in Table IV.

TABLE IV

THE RATINGS OF MONTHS ON BASIS OF AVERAGE POTENTIAL PROFITS OR LOSSES, 1922–33

Months	Four Profit* Years	Four Mixed† Years	Three Loss‡ Years	Eleven Years (1922–1933)
In Storage:				
May	4	2	2	3
June	3	1	1	1
July	2	3	3	2
August	1	4	4	4
Out of Storage:				
September	6	2	1	4
October	5	1	2	3
November	4	3	3	2
December	1	4	4	1
January	2	5	5	5
February	3	6	6	6

* Profit Years = 1922–23, 1923–24, 1926–27, 1927–28.
† Mixed Years = 1925–26, 1928–29, 1931–32, 1932–33.
‡ Loss Years = 1924–25, 1929–30, 1930–31.

When the years of profit and loss, and years showing a mixed tendency are analyzed as a group, it appears that June is the most favorable month in which to store for a profit, July ranking next, May third in importance, and August last. In taking butter out of storage, December is very clearly the month of greatest profit, with November next most favorable, October third, followed by September, January, and February. Based on average experience, an intermediate or early withdrawal from storage offers much better chance for profit than withdrawals made any time after December.

With the financial results of certain years differing so radically

from other years in this eleven-year period, it was thought wise to segregate profit years and loss years from those showing mixed tendencies and establish separate rankings for the months in these three groups. The results are shown in Table IV. Looking first at the four profit years, it is seen that butter moving into storage in August and July has a better chance of profit than that moving in earlier in the season. The most favorable chance for profit on the out-movement is in December or January. It is worth noting that the early withdrawal months do not appear at all within the first five rankings shown in Table II for these profit years. Evidently late storage, and intermediate to late withdrawal offer the best way to make profits in a generally profitable year.

Three of the eleven years were marked by heavy losses. Two of these years were in a depression period. The rating to determine months in which losses were at a minimum shows that storage of butter in June and May gave the best results. This is in sharp contrast to the profit years and corresponds more closely to the eleven-year average performance.

Early withdrawal from storage in the loss years in September, October, and November, in the order named, kept losses at a minimum or gave nominal profits. This is again in direct contrast to the results in profit years. Early movement into storage and early withdrawal constitute the best technique for years of general losses.

The remaining four years show a mixed tendency, with profits prevailing in the first half of the year but the last half showing heavy losses. Storage in June and in May usually shows profits in these years. This tendency corresponds with the practice in the loss years and is in contrast to that of the profit years. The early movement out of storage in October, September, and November, listed in order of importance, kept losses at a minimum. Thus again the ranking of these mixed years closely resembles that of the loss years; early movement in and early withdrawal gave best results.

The problem of the operator in the market is to be able to predict as early as possible the character of the year in which he is operating, so as to select the right month in which to store, or to

store most heavily. There is some tendency for profit and loss years to alternate in pairs, as will be seen by reference to Table I. In contrast to eggs, there is little correlation between average profits and losses on butter storage operations and five-year average holdings on September 1.[3] The demand factors in the market seem to have more to do with price and profit possibilities than supply factors.[4] Regardless of the operator's ability to predict the course of prices, the above analysis shows that in seven out of eleven years movement of butter into storage in June and in May gave substantial profits or kept losses at a minimum. The four years in which this was not true were generally profitable years and losses occurred on June and May butter only when the butter was withdrawn in September.

The more usual position of the market operator, however, is that having placed his butter in storage during the weeks of May to August, he has the problem of determining in what month to withdraw the butter for sale in order to receive the best possible profit. Here it is not very easy to generalize; the average merchant will tell you that December is the best month in which to sell, but in the loss years of 1929–30 and 1930–31 the operator would have been much better off to have withdrawn his butter in September or October. In general it is true, as shown by the analysis of the eleven-year period, that December gives the best results, but a misjudgment of the character of the year during which the merchant is operating may pile up huge losses if butter stored in June or May is not disposed of earlier than December. It is much more imperative in the selection of a month of withdrawal that the operator be able to make some forecast of the future trend of the market. Perhaps he is in a better position to do so by September when holdings are at a peak and butter begins to move out of storage in volume. However, a glance at the graph of

[3] A correlation of profits and losses for the eleven-year period with storage holdings in the four large markets (New York, Boston, Philadelphia, and Chicago) using deviations from a five-year moving average gave a negative coefficient of −.136 which is not significant. For a similar relationship for storage eggs, see the authors' article in this *Journal* for July, 1933.

[4] See G. F. Warren, *The Agricultural Situation* (New York: John Wiley & Sons, 1924), p. 159.

prices for 1929–30 in Figure 1 will show how impossible it was in September of that year to foresee the very drastic decline which took place after that date.

Provided the operator can make some forecast of subsequent price movement, the detailed analysis of profit and loss years, as given above, indicates the withdrawal month which will give maximum profits or minimum losses. In years of probable loss, or years showing mixed profits and losses, butter stored in June and May is best withdrawn in October or September. Butter stored in July or August is best withdrawn in the same months (October or September), unless the forecast is for a year of profit, in which case later withdrawal in December gives more favorable results. Holding in storage later than December gave good results only in profit years and then only in combination with late storage.

The difficulty of forecasting the fluctuations of the cash market has led many operators to hedge against the possibility of loss on stored butter by making use of the futures market. It is necessary, therefore, to look into the possibilities of controlling the risk of storage operations, by noting the effects of hedging on profits and losses in the cash market.

FINANCIAL RESULTS OF HEDGING[5]

The possibility of hedging safely in the months of May–August depends upon (1) whether the spread between cash and future prices during these months is wide enough to cover the carrying charges until the delivery month is reached; (2) whether the hedge contract which has been sold to protect a cash purchase can be bought in without loss in a subsequent period, or during the delivery month, when the cash butter is sold.

The chance of delivering on the contract will first be examined. A study of Figure 1 will reveal the relationship of cash and future prices for the storage season for each year of the eleven-year period. It will be noted that a spread of greater or less amount

[5] Hedging as here discussed refers only to the insurance type of hedge placed on butter which is to be held from months of surplus production in the spring and summer, until the period of heavy withdrawal from September through December.

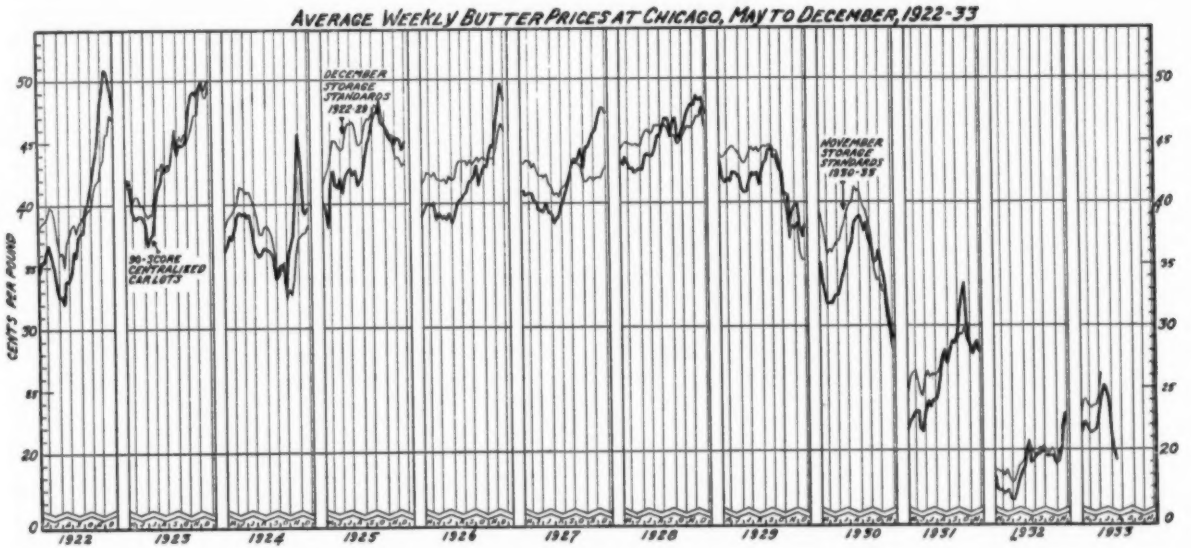
AVERAGE WEEKLY BUTTER PRICES AT CHICAGO, MAY TO DECEMBER, 1922-33
CENTS PER POUND
DECEMBER STORAGE STANDARDS 1922-29
NOVEMBER STORAGE STANDARDS 1930-31
90-SCORE CENTRALIZED CAR LOTS
0
20
25
30
35
40
45
50
1922
1923
1924
1925
1926
1927
1928
1929
1930
1931
1932
1933

FIG. 1

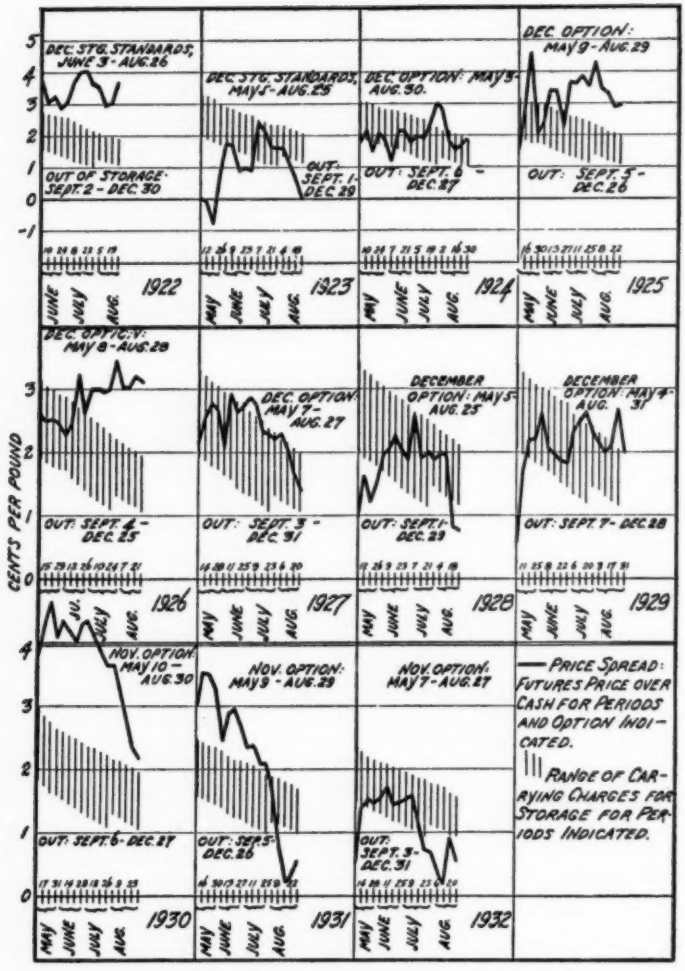
CENTS PER POUND
DEC. STG. STANDARDS: JUNE 3 - AUG. 26
OUT OF STORAGE: SEPT. 2 - DEC. 30
1922
DEC. STG. STANDARDS: MAY 1 - AUG. 25
OUT: SEPT. 1 - DEC. 29
1923
DEC. OPTION: MAY 5 - AUG. 30.
OUT: SEPT. 6 - DEC. 27
1924
DEC. OPTION: MAY 9 - AUG. 29
OUT: SEPT. 5 - DEC. 26
1925
DEC. OPTION: MAY 8 - AUG. 28
OUT: SEPT. 4 - DEC. 25
1926
DEC. OPTION MAY 7 - AUG. 27
OUT: SEPT. 3 - DEC. 31
1927
DECEMBER OPTION: MAY 5 - AUG. 25
OUT: SEPT. 1 - DEC. 29
1928
DECEMBER OPTION: MAY 4 - AUG. 31
OUT: SEPT. 7 - DEC. 28
1929
NOV. OPTION: MAY 10 - AUG. 30
OUT: SEPT. 6 - DEC. 27
1930
NOV. OPTION: MAY 9 - AUG. 29
OUT: SEPT. 5 - DEC. 26
1931
NOV. OPTION: MAY 7 - AUG. 27
OUT: SEPT. 3 - DEC. 31
1932
JUNE
JULY
AUG.
MAY
— PRICE SPREAD: FUTURES PRICE OVER CASH FOR PERIODS AND OPTION INDICATED.
RANGE OF CARRYING CHARGES FOR STORAGE FOR PERIODS INDICATED.

FIG. 2.—Relation of price spread between "November" and "December storage standards" and "90-score centralized car lots" at Chicago, 1922 to 1932, to carrying charges for storage.

appears during May, June, July, and August between the cash and future prices.[6]

The size of this spread means little to the hedger unless related to the carrying charge for holding butter in storage until the delivery or option month. The amount of the spread between the prices for each year is graphically shown in relation to the carrying charge in Figure 2. The vertical lines cutting the amount of price spread represent, at the upper limit, the maximum carrying charge of holding the butter in storage until delivery month is reached. The lower limit of the vertical line represents the minimum charge involved in carrying the butter from the week indicated to the first week of September. Points on the line between these limits represent the cost of carrying the butter for varying lengths of time from the first week in September to the first week in the delivery month, either December or November.

TABLE V

Month	Rank		Total
	1	2	
May	2	1	3
June	1	1	2
July	6	5	11
August	2	4	6

The best time for placing a hedge may not be at the time the cash purchase is made. Obviously, this "best time" is when the size of the price spread is in its most favorable relation to the carrying charge, i.e., above a maximum or approaching a maximum charge.

When this relationship is studied for the eleven-year period, and a ranking is given to the weeks in each month showing the largest and second-largest spreads in relation to the carrying charge, the results appear as in Table V.

[6] The cash price is for 90-score centralized butter in car lots. The future price is the price of December storage standards for the years 1922–29 inclusive, and for November storage standards for 1930–32 inclusive. Daily prices are averaged to get weekly prices.

Weeks in July before July 15 or after July 20, and the first week in August appear to offer the most attractive possibilities for placing the hedge. If the butter is purchased and placed in storage during May and June this means that the operator must carry the risk of the market if he waits until July to execute the hedge.

Analysis was made for the years 1926, 1927, 1930, 1931, and 1932 of the possibility of executing a straight hedge, i.e., placing a hedge at the time the cash purchase was made and either delivering on the contract in the option month, or buying the hedge in when the butter was sold some time subsequent to purchase.

HEDGING DURING 1926

The season starts with the spread below a maximum carrying charge until the week ending June 19. From then on until the end of August the spread continues to widen (see Fig. 2). Obviously there is no opportunity to deliver at a profit on the contract any butter hedged before the week ending June 19. On butter hedged after the week ending June 12 and delivered in December, all costs could have been covered plus a hedging profit of one-half to one cent a pound, or a maximum of $189.00 a car. This was far below the profit which might have been obtained in the cash market without hedging during this same period. On butter bought after June 12 and held unhedged until December, profits per car above all charges ranged from a minimum of $691.00 to a maximum of $1,617.00 with no chance of loss.

What was the chance of profit on butter hedged before the week ending June 19, provided the butter was sold and the hedge bought back at some subsequent date? Butter bought and hedged during May and early June realized large losses if it was sold and the hedge removed at any time during September, October, or November. The reason for this is clear when one looks at the price graph for 1926 in Figure 1. Cash prices were high relative to future prices during May and early June, and low relative to futures until September. After mid-September, carrying charges on the cash butter increased more rapidly than the spread between cash and future prices decreased, with resulting net loss to

the operator when the hedge contract was retired. Not until the week ending December 4, after the cash price had gone above the future, did profits on cash butter offset losses on the future contract sufficient to keep net losses within a limit of $50.00 a car. Profits accrued during the remaining weeks in December, but these were less than might have been obtained through delivery.

In weeks subsequent to the week ending June 12, a hedging operation which involved the removal of the hedge by purchase of the future after the first week in September resulted in losses from $179.00 to $477.00 a car if the butter was sold and the hedge removed in September. Withdrawal in October was quite as bad. After the week ending November 13, small profits appear for butter stored in late July and August. Not until December were substantial profits realized on butter stored and hedged after June 12. Possible profits above carrying charges ranged from $122.00 to $489.00 a car. This was well above what could have been realized through delivery on the contract, but less than half of the profits which accrued in December to non-hedgers; except for a few weeks in September butter stored after June 12 and withdrawn up to and through December realized handsome profits in the cash market.

One may summarize the experience of 1926 by saying that hedging, however used, seriously limited all chances of profit, and, except for December sale or delivery, resulted in rather heavy losses.

HEDGING IN 1929

This was a year of heavy losses in the cash market. Prices at the peak at the end of September were not far enough above the May opening to pay carrying charges. From the first of October until the end of December price decline was almost constant and huge losses running to $2,000 a car in December are indicated in the data. There was no possible chance for profit in the cash market except on butter stored in May and June and taken out in the weeks ending September 21 and 28; and on butter stored during the first three weeks in July and sold during September and the first two weeks in October. On a weekly basis there were but 36 opportunities for profit out of a total of 282 trading combinations.

Hedging and delivering on the contract.—The price spread during the weeks when butter was moving into storage in volume in May, June, July, and August was below a maximum carrying charge most of the time. Only during the weeks ending July 20, August 17, 24, and 31, was the spread favorable to a hedging operation which contemplated delivery (see Fig. 2). On butter bought and hedged during these weeks and delivered on contract in December the carrying charge, including 6 per cent interest on the investment, and a small hedging profit could have been realized. Indeed if butter had been bought and hedged the week ending August 24 an average profit of ½ cent per pound might have been realized through delivery in December.

Hedging and retirement of the contract by purchase.—Placing the hedge in May and June resulted in maximum losses regardless of the weeks in which the butter was sold and the hedge bought back. These losses were larger than the losses of the unhedged operator in the cash market on butter withdrawn during September and October, but much smaller than the losses of the cash operator on butter withdrawn in November and December after further declines in the cash market.[7]

Hedges removed through November and December on butter stored in May and June showed losses much below those of the cash operator and resulted in profits when the cash operator's losses were heaviest. The cash operator had no chance for profit in November and December and his losses averaged over $1,000.00 a car with a maximum loss of $2,027.00. The hedger escaped with average losses of $200.00 a car with a maximum possible loss of $649.00.

On late storage in July and August hedging possibilities were even better. While the small profits made by the cash operator on July butter withdrawn in September could not be realized by the hedger, he was able to keep his average loss at about $100.00

[7] For the cash operator profits were realized in 15 out of 72 possible weekly storage combinations on butter moving in in May and June and out in September and October. There were 50 losses of over $50 a car with a maximum loss of $641.00. For the hedger there were no opportunities for profit and all the losses were well above $50.00 a car with a maximum loss of $795.00.

a car and, out of 153 possible storage combinations, had 40 chances of making a profit.

On the whole it paid handsomely to hedge in this year of general loss. The potential financial results demonstrate, however, that the time factor in hedging is just as important as in cash market operations. Placing the hedge in July and August gave much greater profit on the sale of the future contract than could have been obtained at an earlier date.

The policy of early withdrawal in a loss year when operating only in the cash market is reversed in this year when a hedging operation is performed. Best financial results in this latter instance are realized by late withdrawal. The future price tends to drop below the cash during the delivery month, thus making a profit on the sold future contract more than enough to compensate for the loss in the cash deal (see Fig. 2). This does not hold true after 1929.

HEDGING IN 1930

The heavy losses of 1929 no doubt influenced operators at the storage season of 1930 because prices in the cash market were forced down during May and June. This opened up an abnormally wide spread (see Fig. 2). Prices in the cash market recovered in July and reached a peak in the week ending August 30. Thereafter both cash and future prices declined abruptly until the end of November, the delivery month.[8]

For those who made losses in the 1930 market it must be matter of regret that they did not hedge and stay hedged when the opportunity for delivery at a profit was as promising as it was in May, June, and July of this year. Inspection of the spread graph (Fig. 2) shows that there was no week in the four months in which heavy storage was taking place that the spread of future over cash prices was not above the maximum carrying charge. Profits by the delivery route of from one-quarter to two cents a pound was assured.

[8] On the advice of Mr. Lloyd S. Tenny, manager of the Chicago Mercantile Exchange, the November option was chosen as the basis of hedging operations for 1930–32, since most hedging contracts were in this option.

Assuming, however, that the operator reserved the right to sell his butter and remove the hedge at any time from the first of September to the end of November, what results could have been obtained and how do these compare with results in the cash market unhedged?

Placing the hedge in the week ending June 28 and removing it when the butter was sold the week of October 25, gave the best financial result, a possible profit of $666.00 a car. To make the comparison more general, however, hedging in May and June resulted in small losses under $50.00 a car if the butter was withdrawn in the first two weeks of September. Large profits accrued in the cash market with a range of $220.00 to $934.00 a car for transactions within the same period because September marked the peak of cash prices. Profits continued at an average rate of around $300.00 a car in the cash market on butter bought in June and sold from the second week in September until the end of October. After this latter date losses accumulated rapidly with the loss per car running over $1,000.00 in the last two weeks of November.

In marked contrast, a straight hedging operation showed but four instances of loss on butter withdrawn after September 13, the largest loss being $85.00 a car. Profits realized were around $100.00 a car until after the week ending October 4. From this point to the end of November the hedger realized profits averaging $400.00 a car.

Late storage in July and August netted profits to the cash operator only when the butter was sold in September. Realizable profit ranged from $72.00 to $748.00 a car. After September, losses mounted rapidly; there was no possible chance of profit, and losses per car through October and November averaged $750.00 a car with losses in November well over $1,000.00.[9]

The late hedger placing butter in storage during July and August realized losses of $135.00 a car if the butter was withdrawn in the first two weeks of September, and on butter stored after August 2, small losses accrued if the butter was sold and the hedge removed in the weeks ending October 4, November 22 and 29. Other than

[9] Maximum indicated loss per car for November was $2,266.00

these cases of small loss, however, late stored butter, covered by a hedge, realized profits averaging only slightly less than those obtained from storage in May and June.

In this year of heavy loss it paid to hedge. The best time for placing the hedge was when the price spread was widest in relation to the carrying charge, i.e., from the week ending May 24 to the week ending June 28. Withdrawals in October netted the largest profits.

The characteristic drop of the future below the cash price in the delivery month did not occur to give later withdrawal an advantage as in 1929. In the cash market, the best results were had by placing the butter in storage over the same period (May 24–June 28) but withdrawing it in September.

HEDGING IN 1931

Both cash and future prices started off on new low levels in May, 1931 (see Fig. 1). The rise to early June with a sharp dip during this month may indicate hedging pressure because the price spread was favorable and operators were wary after the chastening experience of 1930. A rise in the cash price in July with the future remaining steady, narrowed the spread so that by early August it was below a maximum carrying charge. The cash price met the future price in mid-August and there was little difference between the two until October when the cash rose sharply above the future. The cash price came down in November to meet the future and remained in this relation until the end of the month.

It was possible to hedge safely and make profit through delivery in November at any time up to and including the week ending July 25. After this date the spread fell below a maximum carrying charge. The great range of the spread in this year is worth noting (see Fig. 2). Did it pay to hedge and to retire the hedge by purchase rather than through delivery?

Assuming that equal amounts of butter were bought and hedged in each week of the four months of May, June, July, and August, and that equal amounts were withdrawn and the hedge retired in each week of September, October, and November, the following results would have been obtained. The cash operator

would have 186 profits and 15 losses with 12 losses above $50.00 a car and a maximum loss of $357.00. His profit ran to a possible maximum of $1,986.00 a car, with average profits of $770.00 a car for the season.

For the operator who hedged in the November option there resulted 80 losses and 121 profits; losses about $50.00 a car, 65; maximum loss $523.00; maximum profits $784.00, with average profit for the season of $76.00 a car.

It made a considerable difference in this year whether the hedge was placed early in the season or late. Hedging in May and June when the spread was wide, with withdrawal any time to the end of November, resulted in only 20 losses out of 104 chances, with but 12 losses above $50.00 a car. The average result for early hedging was a profit of $193.00 a car. This was good protection even though the hedger did forego possible average profits of $800.00 a car in the cash market without any chance of loss. Hedging after July brought maximum losses, 29 of the 65 losses over $50.00 occurring on August hedges alone. The average loss per car for this latter period was $68.00. This is in contrast to an average profit of $600.00 a car in the cash market with but 15 chances of loss.

HEDGING IN 1932

Prices in the spring of 1932 were at a very low level; this seems to have affected the size of the spread between cash and future prices. A glance at the graph for this year (Fig. 2) indicates at once that there was no chance to hedge for delivery at a profit. The spread does not rise above an average carrying charge throughout the period of the into-storage movement. Cash and future prices remain very close together from mid-August to the end of November. There is strong probability that standard storage charges were cut during this year and that the relation of the spread to the carrying charge was actually not as unfavorable as it appears.

The cash operator in 1932 made good profits on butter stored through May, June, and the first two weeks of July regardless of the week in which it was withdrawn, up through November. This statement holds true also for butter stored during the re-

maining weeks of July and August, provided it was not withdrawn until the last two weeks in November. Profits for the above periods averaged around $300 a car.

Losses to the cash operator, some of them as high as $650.00 a car, accrued on butter stored after July 16 and withdrawn in October and the first two weeks of November. On the whole season's operation, however, there were 153 chances for profit and 45 chances of loss. Total realizable profits were considerably greater than losses.

Hedging in the November option, in 1932 with a view of buying in the hedge after September 1, proved disastrous. In all the 201 possible trading combinations there was no chance for profit and all losses ran above $50.00 a car. The average per car loss for the season was $281.00.

SUMMARY AND CONCLUSIONS

First with respect to the cash market only: when the possible financial results of the transactions of an operator who was buying butter for speculative storage over the eleven-year period 1922–33 are reviewed, the conclusions arrived at are:

1. That the best time to buy butter on the average is in June, with May as a second choice followed closely by July.

2. If the operator has any basis for predicting a year in which profits or losses will prevail, then he will do better in a year of profits to postpone the greater part of his buying until July and August. If the results seem uncertain, or the forecast is for a year of losses, he will buy in June or in May.

3. On the average, the operator will profit most by selling his butter in December. If he has any basis for forecasting the market after September 1, and the forecast indicates a season of profits, he will still want to sell in December with sales in January and February giving next best results in that order. If the forecast indicates losses or uncertain profits, he will do best by selling in October with September as the next best month.

4. The operator who has no basis for forecasting the market will play safe by disregarding the possibility of making large profits and will try to keep losses at a minimum. The experience

of the past eleven years shows that purchase and storage of butter in June and sale in November or October gave fair profits in good years, and either gave profits or kept losses at a minimum in bad years.

With respect to hedging, the analysis is not complete because it does not include the many possibilities of shifting the position of the hedge in the market from time to time, and of shifting from one option to another. Within the limits of the study—which does admit of placing the hedge at the most opportune time—the following conclusions seem justified:

1. It pays the operator who is storing butter for profit to hedge in bad years but not in good. This puts a premium on ability to forecast the market but the hedging operation is itself supposed to be an effective substitute for forecasting as a protection against loss in a speculative market. The analysis shows, however, that the market does not work perfectly, for in a good year the rise in the cash price, less the carrying charge, is not enough to offset the loss on the future contract. Therefore, the hedging operation is itself somewhat speculative, certainly not automatic.

2. The relation of the spread between cash and future prices to the carrying charge for the November or December options is a guide to hedging practice. When this spread is above the maximum carrying charge, profits may be made by hedging and delivering on the contract. Such profits will usually be small.

3. Hedging which involves a retirement of the hedge by purchase, results in larger profits than delivery when the hedging operation is successfully performed, and in much larger losses when not successfully performed.

4. The month of July shows the widest margin of price-spread above a maximum carrying charge, with the early weeks of August coming next. When this margin was wide the hedging operation was generally successful, that is, losses were avoided. When the price-spread was below a maximum carrying charge the hedging operation generally resulted in losses. Much depended upon the time at which the butter was sold and the hedge retired.

5. A rating of the financial results of a straight hedging operation for five years indicates the following order of importance of

the months of the in and out movement, that is, of placing the hedge and of taking it off. A rank of "1" is given to the most favorable month. When the December option was used, placing the hedge in August and removing it in December gave best results; with a July–November combination ranking second, June–October third, and May–September least satisfactory.

TABLE VI

RATINGS OF STORAGE MONTHS FOR PLACING AND REMOVING STRAIGHT HEDGES

(Basis of Potential Profits for 5 Years)

In	Dec. Option		Av. Dec. Opt.	Nov. Option			Av. Nov. Opt.
	1926	1929		1930	1931	1932	
May	4	4	4	3	1	2	2
June	3	3	3	1	2	1	1
July	2	2	2	2	3	3	3
August	1	1	1	4	4	4	4
Out							
September	4	4	4	3	2	1	2
October	3	3	3	1	1	3	1
November	2	2	2	2	3	2	3
December	1	1	1	.....	.....	.....	.....

When the November option was used, earlier placing and earlier removal of the hedge is indicated. June–October is the best combination, with May–September taking second rank, July–November third, and August–November least desirable.

6. Best results from delayed hedging were obtained by buying butter in June and placing the hedge in July, selling the butter and removing the hedge in November; next best results were had by buying in June, placing the hedge in July, selling the butter and removing the hedge in October. (See Table VII.)

7. The combination of a speculative and hedging position gave even better results than a delayed hedging operation. The exist-

ence of a spread above a maximum carrying charge during May–August was taken as a guide in deciding whether to hedge in any year. When such a spread was absent, better results were had by taking the risk of the cash market. (See Table VII.)

Table VII shows that the operator who bought in uniform amounts from day to day in the cash market in June, and who sold hedges in July from day to day, selling amounts each day

TABLE VII

FINANCIAL RESULTS OF A COMBINED SPECULATIVE AND HEDGING POSITION
(Buy Cash in June, Sell in November. Sell Future in July, Buy in November)

Year	Future Cash Price Spread Indicates	Results of Cash Transactions (Dollars Per Car)	Results of Future Transaction (Dollars Per Car)	Net Difference
1922	Hedge	+1416	− 884	+ 532
1923	No Hedge	+1405	.....	+1405
1924	Hedge	− 389	+ 910	+ 521
1925	Hedge	+ 197	− 35	+ 162
1926	Hedge	+ 428	− 526	− 98
1927	No Hedge	+ 457	.....	+ 457
1928	No Hedge	+ 422	.....	+ 422
1929	Hedge	− 940	+ 743	− 197
1930	Hedge	− 444	+1171	+ 727
1931	Hedge	+ 758	− 562	+ 196
1932	No Hedge	+ 547	.....	+ 547
Average	.....	+ 351	.....	+ 425

corresponding to his purchases in June, could have sold his cash butter and retired his hedges during November with the results indicated in the table for the eleven-year period. In two of the eleven years he would have netted losses, neither of them large, and he would have averaged $425.00 profit a car for the whole period. Selling the butter and removing the hedge in October would have given a net profit of $181.00 a car.[10]

[10] If one hedged only in the years indicated in Table VII, bought butter in June and sold it in November, placed the ledge in July and removed it in September, the result would have been an average profit of $167.00 a car. If one had bought butter in June and sold it in October, placed the hedge in July and removed it in September, an average profit of $95 a car would have been received.

8. It is worth noting that operating in the cash market without hedging on the June-November basis gave only three cases of loss, one of these quite large. The average profit of $351.00 a car for eleven years compares with the profit of $425.00 to be expected by combining a speculative position with hedging.

9. The June–November performance in the cash market may further be compared with an average profit of $142.00 to be obtained by an operator who was in the cash market continuously over the whole eleven-year period.

10. An average of the net profits and losses for the five years 1926, 1929–32, to be realized from hedging as against operating only in the cash market, shows that the cash operator who was continuously in the market could expect a profit of $109.00 a car, the hedger a loss of $47.00 a car. Confining losses within a $50.00 range may be considered satisfactory hedging protection.

THE USE OF PUBLIC MERCHANDISE WAREHOUSES IN CHICAGO

E. E. FEREBEE[1]

THE concentration of manufacture within the metropolis and the radiation of goods throughout the surrounding area involve the co-operation of many specialized agencies. These agencies are organized into a system by means of buying and selling. Not the least important of these agencies is the public merchandise warehouse.[2] The discussion which follows aims at giving information on the use of public merchandise warehouses in Chicago. Factors affecting the distributor in his decision to use the warehouse are also discussed.

The information for this article is furnished by data collected on inbound and outbound shipments to and from four of Chicago's most prominent public merchandise warehousing companies for the first month of each quarter of the year 1926. These data are available on approximately 36,000 shipments, exceeding 65,000 tons in weight, going to and coming from any one of 1,500 counties scattered throughout the nation. Commodities involved in the shipments have been classified into 31 different groups, the attempt being to classify them in accordance with homogeneity. The data obtained also include point of origin and destination, class of consignor and consignee, kind of merchandise, and weight.

Table I gives the rank according to weight of the different commodities coming into and going out of four Chicago public merchandise warehouses during the months of January, April, July, and October, 1926.

[1] This is part of a doctoral dissertation written by Mr. Ferebee while at the School of Business of the University of Chicago.

[2] The U.S. Bureau of the Census reports an average of 1,152 public merchandise warehouses for the year 1928, these reporting total available space of 53,037,000 sq. ft. Merchandise arrivals at these warehouses during the year totaled 7,823,698 tons, 75.5 per cent of which was stored at least to some extent. The remainder did not go into storage at all but was aided in the distributive processes by public merchandise warehouses.

USERS OF THE PUBLIC MERCHANDISE WAREHOUSE

The distribution of certain commodities, such as goods of a seasonal nature, involves the broker to a considerable extent.

TABLE I

INBOUND AND OUTBOUND COMMODITIES OF FOUR CHICAGO PUBLIC MERCHANDISE WAREHOUSES (BY RANK OF COMMODITY)

(January, April, July, and October, 1926)

Commodity	Inbound		Outbound	
	Weight in Tons		Weight in Tons	
	Rank	Weight	Rank	Weight
Canned goods	1	8,226.3	1	7,201.5
Syrup and molasses	2	5,392.42	6	1,589.0
Dried fruits and vegetables	3	3,300.8	2	2,078.9
Cereals and grains	4	3,160.8	4	1,709.7
Confectioneries	5	2,967.1	12	1,135.3
Soap and cleaning fluid	6	2,509.3	8	1,547.3
Alcohol, beverages, etc.	7	2,063.2	3	1,800.5
Metals and metal products	8	1,955.7	5	1,598.2
Autos and machinery	9	1,897.4	9	1,438.0
Oils and fats	10	1,623.7	15	704.2
Paper and paper products	11	1,159.1	11	1,142.1
Drugs and proprietary medicine	12	1,047.2	7	1,142.1
Building supplies	13	772.85	10	1,391.1
Bakery products	14	756.5	21	319.0
Dry goods and clothing	15	602.0	17	524.7
Chemicals and chemical products	16	518.52	14	753.5
Cosmetics, perfume, etc.	17	483.18	20	353.9
Furniture and fixtures	18	470.4	19	365.9
Glue and gelatine products	19	282.1	25	175.3
China and glass products	20	245.2	13	1,032.6
Paints and varnishes	21	219.8	22	253.5
Tea, coffee, cocoa	22	197.9	26	72.6
Starches and dextrins	23	138.3	30	2.1
Rubber and rubber products	24	126.98	18	456.9
Musical instruments	25	123.3	23	203.5
Flour and mill products	26	85.6	24	184.2
Wood and its products	27	29.3	29	9.4
Tobacco and its products	28	8.4	27	66.0
Leather and leather products	29	1.58	28	42.5
Unclassified	.....	764.4	.....	646.8
Total	.....	41,120.33	.....	30,437.3

Distribution of other commodities has for a long time involved the jobber. Still others, such as many lines of producers' goods, are

normally distributed directly. Therefore in order to reach valid conclusions as to the significance of the public merchandise warehouse in distribution, it is necessary to analyze the users of the warehouse by types of commodities. A detailed analysis has been made in Table II of all commodities as a whole and of four specific classes of commodities. These four classes are selected because of the great volume of them passing through the warehouse.

The shipment of all commodities from the warehouses during the four months of 1926 totaled 30,473.3 tons, just 10,683 tons less than the inbound shipments for the same period. This variance between inbound and outbound figures may be attributed largely to the seasonality factor and the stocks on hand. The four-month sample period used obviously does not give sufficient weight to the heavy production months of a large number of commodities. The largest volume of goods flowing from the warehouses, 12,204 tons, or 40.1 per cent of the total volume, went to the manufacturer. Of merchandise entering the warehouses from all sources 76.8 per cent came from manufacturers. Thus, slightly more than one-half of all goods sent to public merchandise warehouses by manufacturers was distributed directly, whereas slightly less than one-half of such goods was distributed indirectly through middlemen. Over one-third of the total outbound commodities, 37.4 per cent, went into the hands of the wholesaler. The wholesaler was responsible for only 4.8 per cent of the total merchandise going into the warehouses. Thus it may be concluded that approximately seven-eighths of the goods received by the wholesaler through the public merchandise warehouse originated from other distributors than himself.

The retailer received 20.8 per cent of the total merchandise moving from the warehouses during the period. He was the consignor of 10.1 per cent of all commodities flowing into the public merchandise warehouse. Thus, slightly less than one-half of the merchandise received by him through this distributive agency originated from sources other than himself.

Similar analyses may be made of the figures on the selected commodities covered in Table II. However, the present purpose is to discuss what types of commodities are best adapted to warehouse distribution.

TABLE II

ALL COMMODITIES, AND SELECTED CLASSES OF COMMODITIES PASSING THROUGH FOUR CHICAGO PUBLIC MERCHANDISE WAREHOUSES

(January, April, July, and October, 1926)

Class of Consignor	All Mdse.; Wt. in Tons	Per Cent of Total	Canned Goods; Wt. in Tons	Per Cent of Total	Metal Prod.; Wt. in Tons	Per Cent of Total	Conf'y; Wt. in Tons	Per Cent of Total	Dry Goods; Wt. in Tons	Per Cent of Total
	Inbound—by Class of Consignor									
Manufacturer...	31,599.08	76.2	2,982.6	36.3	1,955.7	100.0	2,934.3	98.9	304.9	50.6
Jobber.....	1,925.10	4.8	1,203.5	14.4	.....	.....	32.6	1.1	297.1	49.4
Broker.....	3,177.90	7.7	1,662.5	20.3	.....	.....	.....	.....	.....	.....
Retailer.....	4,418.25	10.7	2,377.7	28.9	.....	.....	.....	.....	.....	.....
Total.....	41,120.33	100.0	8,226.3	100.0	1,955.7	100.0	2,967.1	100.0	602.0	100.0
	Outbound—by Class of Consignee									
Manufacturer...	12,204.0	40.1	1,131.6	15.8	1,001.9	62.7	733.8	64.7	350.7	66.8
Jobber.....	11,394.9	37.4	4,646.3	64.5	261.9	16.4	209.0	18.3	31.1	9.8
Broker.....	325.7	1.7	180.9	2.5	3.9	0.2	5.6	0.6	6.4	1.2
Retailer.....	6,512.7	20.8	1,242.7	17.2	330.5	20.7	186.9	16.4	116.5	22.2
Total.....	30,437.3	100.0	7,201.5	100.0	1,598.2	100.0	1,135.3	100.0	524.7	100.0

The adaptability of commodities for public merchandise warehouse distribution depends upon physical characteristics of the commodity, the choice of trade channels by the distributor, seasonality of production and consumption, and transportation.

TABLE III*

PHYSICAL SUITABILITY OF COMMODITIES FOR PUBLIC MERCHANDISE WAREHOUSE DISTRIBUTION

	Canned Meats	Metal Products	Confectionery	Dry Goods
Dusty	−	−	−	−
Hazardous for insurance	−	−	−	−
Malodorous	−	−	−	−
Excess care, temperature	−	−	−	−
Excess value	−	−	−	−
Fragility, package or contents	−	−	−	−
Access to owner	−	−	−	−
Mussy	−	−	−	−
Isolation	−	−	−	−
Attractive to vermin	−	−	+	+
Excess care, leakage	−	−	−	−
Liability to cause damage	−	−	−	−
Excess care, humidity	−	−	+	−
Susceptible to claims	−	−	+	−
General perishability	−	−	+	−
	15 15−	15−	11−	14−
	100%	100%	73.3%	93.3%

* In the table, if the factor militating against the use of the public merchandise warehouse is present in the commodity, it is so designated by a plus mark (+); if such factor is absent, it is so designated by a minus mark (−). An average of the minus marks reveals the extent to which the commodity has physical characteristics making for public merchandise warehouse distribution.

PHYSICAL CHARACTERISTICS

Table III, by classifying commodities in accordance with elements of special risk to the warehouse, attempts to formulate an index for determining the physical suitability of selected commodities for public merchandise warehouse distribution. The American Warehousemen's Association has endeavored through committee investigation to classify these elements of special risk.[3]

[3] *Warehousing Encyclopedia* (American Warehousemen's Association, 1924). Here the warehouse index of rates refers to the appropriate "standard modifications" for each commodity, so that, as goods are received by the warehouse, there is brought to attention the special liability of the item.

The Association has named these elements "standard modifications." These standard modifications have been used as a basis for Table III.

THE CHOICE OF TRADE CHANNEL

There are found passing through the public merchandise warehouse commodities which use the indirect channel of distribution as well as the direct trade channel. There seems to be no direct correlation between either the direct trade channel and the use of the public merchandise warehouse or the indirect channel and the use of the public merchandise warehouse. Canned goods, a commodity which exceeds all others in the volume entering and leaving the warehouses during the period, favors the indirect route in passing from the producer to the consumer. Metal products, which rank eighth in volume of merchandise entering the warehouse and ninth in outgoing volume, were, for the greater part, distributed directly to either manufacturer, users, or retailers. Because of this lack of correlation between the choice of trade channel and the use of the public merchandise warehouse, there is need for some analysis of the separate factors affecting the manufacturer's choice of trade channels. The more important conclusions revealed by an analysis of such factors are as follows:

1. The need for financing, often prevalent when the manufacturer is operating on a small scale, in many instances causes the use of the public merchandise warehouse. This is particularly true of staples such as canned goods. The market for canned goods is quite definite within certain limits. When the canner meets the conditions which are prescribed for storing, commercial paper, accompanied by warehouse receipts, is eligible for rediscount with Federal Reserve Banks. A warehouse receipt, when lawfully issued, constitutes collateral ranking among the highest classes. So important has become the warehouse receipt that custodian warehousing is being practiced merely as a means of issuing warehouse receipts to be used as collateral in securing loans.
2. Keen competition, when it closes the established trade channel of an industry to newcomers, often forces new manufacturers to use the warehouses as distributive agencies. As a means of combatting competition through quicker delivery, the public merchandise warehouse is resorted to.
3. The hand-to-mouth buying tendency and the resulting demands for quick delivery on the part of both retailers and wholesalers has made it neces-

sary for the manufacturer to establish spot stocks at various strategic points.

4. The trend toward different types of wholesalers, from large general wholesalers to smaller specialty jobbers, cash and carry jobbers, and wagon jobbers, is increasing the importance of the public merchandise warehouse in distribution. Manufacturers must make spot stocks available in order to furnish quick and efficient service.
5. In the distribution of commodities which, due to their nature, are not the most susceptible to public merchandise warehouse distribution, savings in transportation costs may more than offset the added cost of using this type of distributive agency.

SEASONALITY IN PRODUCTION AND CONSUMPTION

Early storage in warehouses was made necessary largely as a result of seasonal production and consumption. At an earlier date storage was confined almost entirely to local areas. The primary function of the warehouse was the creation of time utilities. The warehouse still continues to perform that function. A radio manufacturer, for example, stores his sets in May, June, and July, which are the months of low current demand for radios in order that he may meet the peak demand of November, December, and January. A higher price can often be had by holding than by dumping on the market in the summer. A value has thus been created by storage, not because goods have been made available in a different form or at a different location, but rather because they have been made available at a different time. The need for financing is closely correlated with seasonality in production and consumption. The producer of a commodity with seasonal sales, such as the radio, would experience many unjustifiable expenses should he push the production of the commodity only when the demand called for it. If this manufacturer evens out his production during the months of weak demand, storing his surplus for the period of peak demand, he is avoiding the burden of carrying idle capital. Goods in storage represent invested capital, and as long as they remain in storage without being used as collateral for loans this invested capital is idle.

TRANSPORTATION

The present structure of transportation rates enables the public merchandise warehouse to perform an essential function for the

shippers of merchandise.[4] In a large number of instances the spread between carload and less-than-carload rates is great enough to cover all warehousing costs, thereby giving the shipper the benefit of warehousing services without any additional cost as compared with that of shipping directly to the purchaser in less than carload lots. Quite frequently commodities taking the first-class rate in less-than-carload quantities come under the third-class rate when shipped in carload lots. It is also true that commodities which take a second-class less-than-carload rate often take the fifth-class carload rate. Thus, goods may be shipped in carlots to a warehouse at a central distributing-point under the carlot rate. The warehouse may then be used as a breaking-center, dividing these carload shipments into less than carload shipments and forwarding them, over shorter distances under the less-than-carload rate or by means of trucks. The combined carload and less-than-carload rates in many cases are much less than the straight less-than-carload rate from the point of origin. A concrete example is furnished by a candy manufacturer located in New York City, distributing his products to various points in the Chicago area.

When a shipper wishes to economize in transportation charges by distributing through a central market around which he wishes to distribute his product, and yet does not have sufficient demand for his product in that territory to justify shipments in carloads, he has several other alternatives from which to choose. He may join with several other shippers of commodities taking the same classification to "consolidate freight" into a pool car. Rates on pool cars are considerably lower than less-than-carload rates. Another alternative is the consolidating of freight by means of container-car service. Container-car service enables shippers to have goods transported at somewhat lower than less-than-carload rates, and at the same time provides for flexibility as to the size of shipments and their destinations.

[4] The forwarding of merchandise received in carload lots and the breaking-up of carlot shipments into less-than-carlot shipments can of course be performed by other agencies than the public merchandise warehouse. However, the warehouse provides facilities for combining storage with distribution. The modern warehouse is well fitted for pool-car distribution. It has facilities for unloading, assorting, reloading, checking, marking, tagging, drayage, and packing.

Both long- and short-haul trucking are of increasing significance to the public merchandise warehouse. A number of motor transportation companies operate out of Chicago to points in Illinois, Indiana, Michigan, Wisconsin, and Iowa. Twenty-four-hour service is furnished for goods consigned to these points. Pick-up and delivery service is furnished. Motor-freight transportation rates compare favorably on short hauls with rail rates.

TABLE IV

THROUGH RATES* FROM FACTORY, AND TOTAL COMBINED RATES VIA CHICAGO TO POINTS IN THE CHICAGO AREA

(Rates in Dollars per Cwt.)

From New York To	L.C.L. Through Rate from Factory	L.C.L. Rate from Chicago	Total Rate via Chicago—94½ Cents from Factory to Chicago plus L.C.L. Rate Beyond	Savings by Shipping to Chicago in Carlots
Cedar Rapids, Iowa.....	$1.64	$0.64	$1.58½	$0.05½
Madison, Wis.....	1.68	.51	1.45½	.22½
Lansing, Mich.....	1.13½	.67	1.61½	— .48
Green Bay, Wis.....	1.57½	.65	1.49½	.06
Fort Dodge, Iowa.....	1.91	.79	1.73½	.17½
Des Moines, Iowa.....	1.82	0.73	1.67½	0.04½

* Rates as of 1927.

The pool-car method of distribution through public merchandise warehouses approximates fast-freight and package-car service in speed. It is often said that such expedition is possible only for the maximum portion of the haul, and that when these carlot shipments are distributed through trap cars by the public merchandise warehouse more than enough time is lost, through delay, to offset the savings in freight rates. Such is certainly not true in the large terminal markets of the country. Chicago, for example, has more than three thousand package cars leaving daily. These cars are routed to every town in the United States large enough to have a post-office. Each day about two thousand points in the forty-eight states are reached, there being a transfer point in each state to more than sixty thousand other points. In package-car

service Chicago has one-day delivery service to Dubuque, Iowa, and Evansville, Indiana; two days to Detroit, Michigan; Pittsburgh, Pennsylvania; and Buffalo, New York: three days to Kansas City, Missouri, and Montgomery, Alabama; four days to New York, New Orleans, and Oklahoma City; five days to Boston and Denver; nine days to Los Angeles and San Francisco; and exceptionally good time to other points.

Another economic advantage derived through the use of the public merchandise warehouse as an auxiliary to transportation service is the decreased damage risk. Aside from provision by the warehouse of experts in handling commodities, it is a known fact that carload shipments, being handled less frequently, are less liable to damage, pilferage, and exposure to the elements.

Thus, when there is a sufficient spread between carlot and less-than-carlot rates compared with storage costs, when time is the essence of successful competition, and when the merchandise involved is particularly susceptible to damage in transit, the economies of using the merchandise warehouse as an auxiliary to transportation are apparent.

[*To be continued*]

PROCEDURES FOR DETERMINING THE SECRETARIAL DUTIES TO BE INCLUDED IN A COURSE FOR COLLEGE STUDENTS

ANN BREWINGTON[1]

THE following data were accumulated over a period of six years for the purpose of obtaining information which might be helpful in the organization of a course in secretarial work for students registered in the Secretarial Division of the School of Business.

At the beginning of the technical courses in secretarial work the students checked through Charters and Whitely's list of secretarial duties,[2] recording the number of each duty that they did not know how to perform and which they thought the classroom procedure would include. The duties listed under Sections II, III, V, and X were not included in the check-list as the students were just beginning the study of shorthand, typewriting, and accounting. Accordingly, it was assumed that they did not know how to perform those duties. The duties listed under Section IV were included, however, in order to determine whether or not the students were familiar with the forms of the business documents listed in that section. Each year the problems assigned the class were selected from the duties listed by the students.

The same procedure was followed in determining the duties to be included in a course for college students, using the total number of cases, 97, for the six years 1926, 1928, 1929, 1930, 1931, 1932. The check-lists of 1927 were not included because they were so irregular as to appear unreliable. The number of students not knowing how to perform each of the 449 duties was expressed as a percentage of the total number, 97. Five per cent of the 97 students in the six years did not know how to perform duty No. 1; 3 per cent did not know how to perform duty No. 2; 24 per cent,

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[2] *Secretarial Traits and Duties*. Baltimore: Williams & Wilkins Co., 1924.

duty No. 3, etc. The percentages for the six years ranged from 1 to 87 per cent. One per cent means that the duty was mentioned only once in the entire six years, or by only 1 person out of the 97. Six duties (Nos. 730, 731, 760, 816, 832, and 837) were listed only once. Three duties (Nos. 811, 813, and 814), all occurring in Section XII, were never listed.

The number of duties occurring in any particular percentage group ranges from 1 to 14. All the percentage groups containing

Duties	Percentage Groups	Duties	Percentage Groups
1 in each of	3	7 in each of	9
2	6	8	2
3	8	9	9
4	15	10	3
5	9	11	1
6	15	14	1

11 or more duties are below the 10 per cent frequency mark, as shown in Table I.

Assuming that these data show the proportion of a class in secretarial work that will not know how to perform each of these 449 duties, the next step is to determine the relative importance of the duties in terms of students' inability to perform them. The procedure followed is that of taking the arithmetical average of the proportion of the students listing each duty as the base and calculating the percentage ratios of all duties to that base. Using the arithmetical average 36 as the base (100), the percentage relative for duty No. 28 is found to be 2.41 (87 divided by 36); for each of the 7 duties in the 60 per cent classification, 1.66; for each of the 9 duties in the 26 per cent classification, 0.72. The percentage relatives for all other duties are obtained in the same manner. These data are not shown here, but in Table I a line is drawn under the base, 36 per cent, showing that some duties are one, two, three, or only one-half times as important as other duties. Inspection of the table also reveals that 235 of the duties are below the base, 36 per cent; 208 are above it; and only 6 are on it. In other words, less than one-half of the duties listed are on or above the base line. The total number of duties listed by more than and less than 36 per cent of the students is shown in Table II,

TABLE I

NUMBERS OF 449 DUTIES ARRANGED ACCORDING TO PERCENTILE RANKS OF STUDENTS' LISTS AND IN TERMS OF KIND OF ABILITY REQUIRED IN PERFORMANCE OF DUTIES

Percentile Rank	Total No. of Duties (Each Dot Represents One Duty)	Routine	Form	Decision and Discretion	Contact with People	Management and Supervision	Specific Knowledges	Mechanical Manipulation
87	1 .	28	.....	.....	.....	.....	.....	.....
86	.....	.....	.....	.....	.....	.....	.....	.....
85	.....	.....	.....	.....	.....	.....	.....	.....
84	.....	.....	.....	.....	.....	.....	.....	.....
83	.....	.....	.....	.....	.....	.....	.....	.....
82	2 . .	.....	272, 278	.....	.....	.....	.....	.....
81	.....	.....	.....	.....	.....	.....	.....	.....
80	4	788	275, 287	.....	.....	.....	.....	820
79	7	.....	269, 270, 274, 277, 284, 288	.....	.....	.....	.....	785
78	4	.....	268, 271, 276, 286	.....	.....	.....	.....	.....
77	7	.....	261, 281, 283, 290, 304, 305	6	.....	.....	.....	.....
76	4	758	265, 280, 301	.....	.....	.....	.....	.....
75	6	786	260, 266, 267, 300, 314	.....	.....	.....	.....	.....
74	7	.....	252, 253, 254, 262, 282, 285	.....	.....	.....	.....	784
73	8	8, 475	251, 306, 313	.....	.....	.....	464, 864, 865	.....
72	6	.. ..	255, 273, 292, 311, 321	.....	.....	.....	465	.....
71	7	441, 749	302, 308	.....	.....	.....	468, 840	782
70	6	.....	259, 263, 264, 316, 323	.....	.....	.....	469	.....
69	2 . .	474	.....	.....	.....	.....	.....	783
68	5	803	229, 241, 256	.....	.....	.....	.....	466
67	1 .	476	.....	.....	.....	.....	.....	.....

66	6	. . . . .	233, 307, 309, 310, 318	. . . . .	. . . . .	. . . . .	472	
65	6	. . . . .	243, 299, 303, 315, 319, 320	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
64	4	. . . . .	240, 289, 312, 317	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
63	2 . .	473	. . . . .	. . . . .	598	. . . . .	. . . . .	. . . . .
62	4	14	322	. . . . .	551, 597	. . . . .	. . . . .	. . . . .
61	4	799, 800	244	. . . . .	. . . . .	. . . . .	. . . . .	806
60	7	787, 804	230, 245, 279, 294	. . . . .	. . . . .	. . . . .	442	. . . . .
59	3 . . .	. . . . .	250, 296	. . . . .	. . . . .	. . . . .	. . . . .	841
58	2 . .	. . . . .	291	478	. . . . .	. . . . .	. . . . .	. . . . .
57	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
56	6	462, 755	231, 257, 258	. . . . .	595	. . . . .	. . . . .	. . . . .
55	3 . . .	. . . . .	246, 249, 295	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
54	9	791	247	443, 483	526, 535, 577	. . . . .	. . . . .	812, 845
53	6	743	236, 242, 248, 293	802	. . . . .	. . . . .	. . . . .	. . . . .
52	9	. . . . .	228, 232, 234, 238, 298	484, 514, 789	. . . . .	. . . . .	. . . . .	847
51	4	742	. . . . .	482	546	578	. . . . .	. . . . .
50	4	. . . . .	235	480	. . . . .	. . . . .	487, 498	. . . . .
49	3 . . .	. . . . .	297	479, 744	. . . . .	. . . . .	. . . . .	. . . . .
48	2 . .	444	. . . . .	. . . . .	. . . . .	. . . . .	488	. . . . .
47	3 . . .	22, 422	. . . . .	515	. . . . .	. . . . .	. . . . .	. . . . .
46	9	440, 477, 567, 766	. . . . .	. . . . .	516, 542, 575, 596	583	. . . . .	. . . . .
45	5	776	. . . . .	492, 493, 494	. . . . .	. . . . .	. . . . .	781
44	4	446, 751	. . . . .	519	. . . . .	. . . . .	819	. . . . .
43	4	20, 862	239	510	. . . . .	. . . . .	. . . . .	. . . . .
42	5	439, 810	. . . . .	508, 512	. . . . .	523	. . . . .	. . . . .
41	4	10, 750, 779	. . . . .	481	. . . . .	. . . . .	. . . . .	. . . . .
40	1 .	. . . . .	. . . . .	. . . . .	. . . . .	524	. . . . .	. . . . .
39	3 . . .	29, 449	. . . . .	485	. . . . .	. . . . .	. . . . .	. . . . .
38	4	445, 737	237	486	. . . . .	. . . . .	. . . . .	. . . . .

TABLE I—*Continued*

Percentile Rank	Total No. of Duties (Each Dot Represents One Duty)	Routine	Form	Decision and Discretion	Contact with People	Management and Supervision	Specific Knowledges	Mechanical Manipulation
37	5 · · · · ·	463, 778, 801	227	421	.....	.....	.....	.....
36	6 · · · · · ·	438, 453, 740, 752	848	467	.....	.....	.....	.....
35	3 · · ·	31	.....	830	.....	538	.....	.....
34	4 · · · ·	585, 736, 747	.....	.....	528	.....	.....	.....
33	6 · · · · · ·	21, 437, 491, 584	.....	860	.....	534	.....	.....
32	3 · · ·	.....	.....	593	533	527	.....	.....
31	4 · · · ·	756, 790, 855	.....	870	.....	.....	.....	.....
30	5 · · · · ·	448, 450, 589	.....	.....	553, 580	.....	.....	.....
29	6 · · · · · ·	9, 25, 436, 447, 753, 769	.....	.....	.....	.....	.....	.....
28	8 · · · · · · · ·	30, 454, 456, 511, 773	.....	509, 513	.....	569	.....	.....
27	5 · · · · ·	5, 792	.....	507, 517, 518	.....	.....	.....	.....
26	9 · · · · · · · ·	451, 735, 754, 765, 777	.....	496	552	570, 871	.....	.....
25	5 · · · · ·	435, 796, 839	.....	522, 856	.....	.....	.....	.....
24	9 · · · · · · · ·	3, 490, 733, 757	.....	.....	532, 539, 547, 594	.....	868	.....
23	2 · ·	.....	.....	495	.....	587	.....	.....
22	5 · · · · ·	429	.....	.....	536, 579	576, 582	.....	.....
21	6 · · · · · ·	32, 430, 780, 793, 794	.....	.....	531	.....	.....	.....
20	6 · · · · · ·	431, 432, 452, 455, 761, 809	.....	.....	.....	.....	.....	.....
19	.....	.....	.....	.....	.....	.....	.....	.....
18	10 · · · · · · · · ·	548, 762	.....	489, 499, 798, 866	592	557, 565, 573	.....	.....

17	7	426, 427, 428, 748, 826	. . . . .	. . . . .	559	560	. . . . .
16	5	771, 827, 842	. . . . .	500	. . . . .	563	. . . . .
15	7	423, 424, 425, 433, 434	. . . . .	. . . . .	. . . . .	545	844
14	6	12, 26, 540, 739	. . . . .	. . . . .	543	571	. . . . .
13	6	4, 581, 588, 770	. . . . .	501	586	. . . . .	. . . . .
12	9	556, 759, 818	. . . . .	. . . . .	550	566, 568, 572, 574	833
11	7	16, 470, 497, 562, 774, 817	. . . . .	. . . . .	530	. . . . .	. . . . .
10	4	471, 746	. . . . .	829, 834	. . . . .	. . . . .	. . . . .
9	11	775, 795, 805, 808, 843, 854	. . . . .	506	537, 541, 544	564	. . . . .
8	10	7, 460, 525, 732, 738, 828	852	502, 521	529	. . . . .	. . . . .
7	9	15, 17, 461, 503, 797, 807, 835	. . . . .	. . . . .	558, 561	. . . . .	. . . . .
6	14	27, 504, 505, 591, 734, 815, 822, 849, 851, 857	850	853	549, 555	. . . . .	. . . . .
5	7	1, 11, 28, 590, 858, 859	. . . . .	. . . . .	554	. . . . .	. . . . .
4	9	24, 458, 459, 520, 741, 772, 831, 861, 869	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
3	9	2, 13, 19, 745, 764, 767, 823, 863	. . . . .	825	. . . . .	. . . . .	. . . . .
2	10	18, 457, 763, 768, 821, 824, 836, 838, 867	. . . . .	846	. . . . .	. . . . .	. . . . .
1	6	730, 731, 760, 816, 832, 837	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
0	3 . . .	811, 813, 814	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
	449	205	100	52	39	25	16	12

where the duties are arranged according to Charters and Whitely's classification as to type of work. Section IV, typewriting duties, contains the greatest number of duties which students are unable to perform. None of the duties in this section was listed by less than 36 per cent of the students. Furthermore, 2 of the duties listed by 82 per cent of the students, and accordingly having a relative importance of 2.27, are in this section.

TABLE II

CHARTERS AND WHITELY'S CLASSIFICATION OF DUTIES ARRANGED ACCORDING TO ARITHMETIC AVERAGE OF STUDENTS' LISTS

Section No.	Kind of Duties	No. of Duties in Section According to Charters and Whitely's Classification	No. of Duties Listed by Less than 36 Per Cent of the Students	No. of Duties Listed by 36 Per Cent or More of the Students
I	Mailing	32	24	8
IV	Typewriting	97	0	97
VI	Filing, indexing	36	23	13
VII	Telephone	20	7	13
VIII	Editorial	43	20	23
IX	Meeting and handling people	79	63	16
XI	Clerical	77	45	32
XII	Miscellaneous	65	53	12
Total		449	235	214

In order to determine the duties that can best be learned in school rather than on the job, the duties listed by the students are compared with those listed by 45 secretaries and reported in Charters and Whitely's Table VI. These 45 secretaries were asked to check a list of 166 duties, indicating those that could best be learned in school rather than on the job. Only 95 of the 166 duties come in the eight classifications according to type of work included in this study, and accordingly only that number can be compared with the duties listed by the students. Recognizing all the limitations mentioned by Charters with respect to the reliability of the judgment of these secretaries and the limited number of duties reported by them, comparison of the data makes it possible to select 25 duties which should be included in the course

of study. By tabulating the duties listed by 50 per cent or more of the secretaries and by 36 per cent or more of the students, it was found that 25 of the 95 duties fall within those limits. Using these same standards, 15 duties are reported by more than 50 per

TABLE III

COMPARISON OF JUDGMENTS OF SECRETARIES AS TO DUTIES THAT SHOULD BE LEARNED IN SCHOOL WITH ARITHMETIC AVERAGE OF STUDENTS' LISTS

Type of Work	50 Per Cent Secretaries and 36 Per Cent Students	50 Per Cent Secretaries but Less than 36 Per Cent Students	Less than 50 Per Cent Secretaries but More than 36 Per Cent Students	Less than 50 Per Cent Secretaries and Less than 36 Per Cent Students	Total
I. Mailing	10, 29	12, 16, 17, 24	.....	1, 2, 3, 4, 5, 11, 18, 13, 30	15
IV. Typewriting	227, 297, 231, 293, 294, 295, 296, 241, 292, 291, 303, 233,	.....	262	.....	13
VI. Filing, indexing	422	423	.....	.....	2
VII. Telephones	.....	458, 460, 461	462, 463, 466, 464, 465	457, 459	10
VIII. Editorial	480, 481, 477, 479, 483, 482, 478, 494	497	.....	.....	9
IX. Meeting and handling people	.....	.....	523, 542	520, 525, 521, 561, 563, 564, 560, 543, 544, 545	12
XI. Clerical	.....	.....	742, 743	730, 731, 732, 738, 741, 733, 734, 736, 745, 795, 735, 796, 793, 759, 794	17
XII. Miscellaneous	820, 847	808, 814, 816, 809, 853, 852	819	811, 807, 821 813, 815, 818, 817, 854	17
Total	25	15	11	44	95

cent of the secretaries but by less than 36 per cent of the students, and accordingly should be considered tentatively as duties to be included in the course; 11 duties are reported by less than 50 per cent of the secretaries but by more than 36 per cent of the students, and likewise should be considered tentatively. But, still more significant, 44 duties are reported by less than 50 per cent of the secretaries and by less than 36 per cent of the students. These 44 duties, if included in the course of study, should prob-

ably be placed at the end of the list so as to avoid their taking precedence over duties which secretaries think should be learned in school and which students do not know how to perform.

In order to obtain the relative importance of the duties in actual office work, the 449 duties are (1) ranked according to frequency listed by the students, the highest frequency ranking 1 and the lowest ranking 449; (2) divided into ten groups of approximately 45 each; and (3) compared with Charters and Whitely's frequency of performance. Inasmuch as Charters and Whitely's

TABLE IV

NUMBERS OF THE 35 DUTIES COMMON TO FREQUENCY DECILES ACCORDING TO CHARTERS AND WHITELY AND ACCORDING TO STUDENTS' LISTS

Decile	No. of Duties	Total
I	.....	.....
II	.....	.....
III	14, 244, 249, 294, 295, 296, 442, 483	8
IV	847, 578	2
V	737, 740, 439, 510, 512, 523	6
VI	756, 437, 509, 511, 589, 593	6
VII	856, 455, 536, 576, 587	5
VIII	817, 827, 550, 581, 588	5
IX	854, 857	2
X	832	1
Total	.....	35

frequency of performance deciles were made for the entire list of 871 duties, the frequencies of the 449 were re-ranked and divided into decile groups. Only 35 of the 449 duties occurred in the same decile group of both rankings, that is, ranking according to the frequency listed by the students and ranking according to Charters and Whitely's frequency of performance (see Table IV).

While certain conclusions can be drawn from the data with respect to the proportion of students not knowing how to perform certain duties and the relative importance of those duties according to (*a*) students' inability to perform them and (*b*) secretaries' judgments as to the duties that can best be taught in school, those conclusions in turn give rise to a new series of questions. Obviously, a duty which 75 per cent of a group of students cannot perform

should be included in the course. Equally obvious is it that a duty which only 1 person out of 100 does not know how to perform should not be studied by the group as a whole. However, the question arises as to the order in which the specific duties or groups of duties should be taught. Is it possible to combine several duties so that the students will retain an idea of the relative importance of each? If so, what should be the basis of such combinations? In an attempt to answer these questions the duties were classified in terms of kind of ability or capacity needed for performance of the duty, such as "routine," "form and arrangement," "specific knowledges," "mechanical manipulation," "contact with people," "management and supervision," "decision and discretion" (see Table I). This classification differs from that of Charters and Whitely in that their classification is made in terms of the type of work involved, such as "mailing duties," "transcription duties," "clerical duties," etc. (see Table II).

The terms used to designate the classifications of duties in Table I serve also generally to explain the nature of the ability involved. The duties are arranged in these classifications according to the proportion of the students not knowing how to perform them. Eighty-seven per cent of the students do not know the routine involved in the performance of duty No. 28; 82 per cent do not know the form involved in duties Nos. 272 and 278; 58 per cent cannot make the decisions or exercise the discretion involved in the performance of duty No. 478; 34 per cent feel that they cannot successfully establish the contacts with people involved in duty No. 528; only 9 per cent cannot manage and supervise according to the requirements of duty No. 564; 44 per cent do not have the specific knowledge required for the performance of duty No. 819; and 45 per cent do not have the skill in mechanical manipulation necessary in the performance of duty No. 781. The seeming discrepancies in the percentages in the classification "specific knowledges" are explained by the fact that part of the students took into consideration all the duties on the check-list which they could not perform while others checked only the duties which they could not perform and for which they thought opportunity would be afforded to learn in a secretarial course. Generally, opportunities

are not afforded in the classroom for taking X-ray pictures and for giving gas to patients.

Inasmuch as (1) the students reported 446 duties out of a possible 449 that they did not know how to perform, (2) Charters and Whitely show the median number of duties performed by secretaries to be 132, and (3) the compilation of Table IV revealed only 35 duties that should probably be included in a course of study according to the standard of correlation between decile rankings of students and Charters and Whitely's ranking of actual performance on the job, Table V was compiled to reveal the degree of importance in actual office work according to Charters and Whitely of all 214 duties on or above the arithmetical average of the proportion of students listing each duty.

Table V constitutes the basis for the organization of the course of study in that it supplies the decile ranking of the duties, the numbers of which are arranged according to (*a*) the type of work, such as mailing, indexing, editorial, etc., and (*b*) the type of ability needed in the performance of the work, such as routine, discretion, mechanical manipulation, etc. With respect to type of work, typing various business forms constitutes 97 of the 214 duties; clerical work, 32, and editorial, 23, of the 214. The typewriting duties appear in all deciles; 40 of them are in the first five deciles and 57 in the last five. The total number of duties in the first five deciles increases from 8 in Decile I to 23 in Decile V. The number in the last five deciles increases from 21 duties in Decile VI to 30 in Decile X. Other types of work are not so concentrated, but are approximately evenly distributed throughout the ten deciles, with the exception of editorial duties, which appear in the last four deciles.

With respect to the type of ability needed in the performance of the work, the ability to set up forms, to do routine work, and to make decisions and exercise discretion will enable the student to perform 46, 23, and 11 per cent, respectively, of the duties, while ability in contacting people, in management, in specific knowledges, and in mechanical manipulation must be acquired if the student is to perform the other 20 per cent of the duties. The ability to set up forms is concentrated in typing; approximately 50

per cent of the routine duties are clerical, while the other 50 per cent are of importance in connection with mailing, filing, telephoning—in the order named. Ability to make decisions and exercise discretion is concentrated in editorial duties.

In order to see just what correlation exists between the several criteria, the duties were tabulated in terms of four criteria: (1) as listed by 36 per cent or more of the students; (2) as listed by 50 per cent or more of the secretaries on the job as a duty better learned in school than on the job; (3) as occurring in the same decile according to the students' frequencies and according to Charters and Whitely; and (4) as occurring in the first seven deciles according to Charters and Whitely. A duty which does not meet more than one of these criteria is probably not important enough to deserve a place in the secretarial course; certainly it is not important enough to be given first consideration. There are 158 duties which meet two or more of the criteria; 34 of them which meet three or more. In addition to the 133 duties which were listed by 36 per cent or more of the students, 40 duties were listed by 50 per cent or more of the secretaries, 27 were common to the same decile in Charters and Whitely and in the students' lists; and 157 occurred in the first seven deciles according to Charters and Whitely.

These 158 duties, which include all the duties in the first seven deciles of Table V, duty No. 820 in the ninth decile of the same table, and duties Nos. 12, 16, 17, 24, 423, 437, 455, 458, 460, 461, 497, 509, 511, 536, 576, 587, 589, 593, 756, 808, 809, 814, 816, 852, 853, and 856, will form the nucleus of the secretarial course. If the teacher wishes to increase the number of duties included in the course, he may extend the list to include the remainder of the 214 duties which more than 36 per cent of the students cannot perform. If he wishes to extend his list still farther to select other duties to teach the abilities or types of work with which he is dealing, he would probably choose the 8 remaining duties which are common to the same deciles according to Charters and Whitely and according to students' lists.

Table V will also serve the teacher in the organization of these duties according to the type of work or according to the ability

TABLE V

NUMBERS OF THE 214 DUTIES ABOVE THE ARITHMETICAL AVERAGE OF STUDENTS' LISTS ARRANGED IN FREQUENCY DECILES ACCORDING TO TYPE OF WORK AND TYPE OF ABILITY REQUIRED IN PERFORMANCE OF THOSE DUTIES

Type of Work	Type of Ability						
	Routine	Form	Decision and Discretion	Contact with People	Management and Supervision	Specific Knowledges	Mechanical Manipulation
Decile I:							
I. Mailing	20, 22						
IV. Typewriting		227, 230, 242					
VI. Filing, indexing	445						
VII. Telephoning	473						
VIII. Editorial							
IX. Meeting and handling people							
XII. Miscellaneous							812
Decile II:							
I. Mailing	10, 29						
IV. Typewriting		228, 231, 235, 239, 248, 297, 298					
VI. Filing, indexing	444						
VII. Telephoning			443				
VIII. Editorial			467				
IX. Meeting and handling people			481, 480				
XI. Clerical							
XII. Miscellaneous							781

Decile III:							
I. Mailing	8, 14						
IV. Typewriting		232, 244, 249, 255, 293, 294, 295, 296, 309					
VI. Filing, indexing	422, 453					442	
VII. Telephoning						472	
VIII. Editorial	477		479, 483				
IX. Meeting and handling people							
XI. Clerical							
XII. Miscellaneous							
Decile IV:							
I. Mailing			6				
IV. Typewriting		237, 240, 241, 245, 250, 260, 292, 310, 311					
VI. Filing, indexing	446						
VII. Telephoning	462, 463						466
VIII. Editorial			485				
IX. Meeting and handling people					578		
XI. Clerical							782
XII. Miscellaneous							847
Decile V:							
I. Mailing							
IV. Typewriting		234, 236, 247, 259, 266, 258, 285, 291, 299, 306, 307, 312					
VI. Filing, indexing	439						
VII. Telephoning	474						
VIII. Editorial			482, 510, 512			487	
IX. Meeting and handling people				526	523		
XI. Clerical	737, 740, 742						

TABLE V—*Continued*

Type of Work	Type of Ability						
	Routine	Form	Decision and Discretion	Contact with People	Management and Supervision	Specific Knowledges	Mechanical Manipulation
Decile VI:							
I. Mailing							
IV. Typewriting		229, 251, 252, 253, 264, 267, 273, 303, 315					
VI. Filing, indexing	438, 440, 441						
VII. Telephoning							
VIII. Editorial			478, 484, 493, 494				
IX. Meeting and handling people				577			
XI. Clerical	743, 752, 779						
XII. Miscellaneous		848					
Decile VII:							
I. Mailing							
IV. Typewriting		233, 238, 243, 254, 265, 269, 276, 290, 308, 316, 317, 320					
VI. Filing, indexing	449		421				
VII. Telephoning						464, 465, 468, 469	
VIII. Editorial			486				
IX. Meeting and handling people				575	524		
XI. Clerical	755, 778, 786, 787						783, 784, 785
XII. Miscellaneous							
Decile VIII:							

Decile VIII:							
I. Mailing							
IV. Typewriting		256, 263, 268, 270, 271, 280, 281, 282, 284, 300, 318, 319					
VI. Filing, indexing							
VII. Telephoning							
VIII. Editorial			492, 508, 515				
IX. Meeting and handling people				551, 595			
XI. Clerical	758, 776, 800, 801		744				806
XII. Miscellaneous	810						
Decile IX:							
I. Mailing							
IV. Typewriting		257, 261, 262, 272, 275, 277, 279, 283, 286, 288, 313, 314					
VI. Filing, indexing							
VII. Telephoning	475, 476						
VIII. Editorial			514			488, 498	
IX. Meeting and handling people				535, 546			
XI. Clerical	788, 791, 799, 803, 804		789				
XII. Miscellaneous	862					819, 840	820
Decile X:							
I. Mailing	28						
IV. Typewriting		246, 274, 278, 287, 289, 301, 302, 304, 305, 321, 322, 323					
VI. Filing, indexing							
VII. Telephoning							
VIII. Editorial			519	516			
IX. Meeting and handling people	567			542, 596, 597, 598	583		
XI. Clerical	749, 750, 751, 766		802				
XII. Miscellaneous						864, 865	841, 845

required to perform the duties. Several different types of duties in which the ability to make decisions is required are recorded there. This variety makes it possible for the teacher to provide various kinds of opportunities for the making of decisions rather than a specific kind of opportunity or situation. The extent to which such an ability is emphasized will depend somewhat on the type of work the students usually do upon leaving the secretarial course. If, as is likely in a college or university secretarial course, they usually step into secretarial positions which require considerable ability in making decisions and carrying responsibility, more emphasis will be placed on this ability than if the students go into routine stenographic positions.

SUMMARY

The following procedures give the teacher four methods of selecting the various duties and types of ability to be included in a course in secretarial work for college students. Each of these procedures is more reliable if considered in conjunction with one or more of the others, rather than if used as the sole criterion.

1. Secure a list of the duties which the students cannot perform. Determine the relative importance of those duties in terms of the average ability of the group of students.

2. Group the duties listed by the students according to whether they should be learned in school or on the job. The data provided by Charters and Whitely are used in this study but they have so many limitations that the individual teacher should secure his own data by means of a questionnaire issued to all members of the secretarial division within six months after they go on their first job. This would enable the teacher to get a good idea of the duties which the students could not perform and had difficulty in learning on the job and those which they could perform but which were seldom, if ever, needed. A duty could very well be of first importance and 90 per cent of the group be unable to perform it and yet be required in actual office work so seldom that the secretary would have ample opportunity to learn to perform it before it was required.

3. Determine the frequency with which these duties are performed in actual business by using the frequencies reported by Charters and Whitely on 871 secretarial duties.

4. Classify the duties in terms of the kinds of ability they require so as to (*a*) determine the order in which the duties should be learned and (*b*) organize them in such a way that the students will retain an idea of their relative importance. The classifications set up in this study seem adequate for any secretarial course. However, the teacher's own conception of the importance of various types of abilities will determine his selection in this respect, and the types of jobs into which the students are inducted will also determine the kinds of abilities to be emphasized.

ORGANIZED LABOR AND NATIONAL RECOVERY LEGISLATION

JAY FINLEY CHRIST[1]

FOR the third time in twenty years, congressional legislation is hailed as "a modern Magna Carta for wage earners." The Clayton Act was so regarded by the late Samuel Gompers; the Norris Act of 1932 was praised in terms no less extravagant by certain outstanding publications;[2] and now the language of the National Industrial Recovery Act and similar language in the Bankruptcy Act and the Emergency Railroad Transportation Act of 1933 have been greeted with the same enthusiasm and in the same language.[3] The Clayton Act was a complete disappointment, and it is highly probable that most of the features of the Norris Act belong in a museum of legal futilities.[4] The relevant features of the recent legislation promise a great deal more (prima facie) than can be expected from the Norris Act, so far as the provisions of the recent acts are applicable to organized labor.

The Clayton Act purported to curb the use of the injunction in labor disputes; the Norris Act seeks to curb the use of the injunction and to outlaw the yellow-dog contract; the recovery legislation seeks to *abolish* the yellow-dog contract and all of its appurtenances and to safeguard the status of railroad workers employed by roads subject to the terms of the Emergency Railroad Transportation Act.

The provisions which bear upon the use of the yellow-dog contract and which are in fact much broader in scope than the bare outlines of the practice of using such contracts, were first inserted in the Bankruptcy Act of March 3, 1933, at the instance of Senator Norris.[5] The

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[2] See summary of comments in *Literary Digest*, March 26, 1932.

[3] See *Labor* (weekly) July 11, 1933, p. 1, and every subsequent issue down to September 1. See *ibid.*, Aug. 1, P. 1, "Company Unions Banned."

[4] See the author's articles: 26 *Ill. Law Rev.* (January, 1932), 516; XIX *Virginia Law Rev.* (November, 1932) 51; and this *Journal*, Vols. V and VI, *passim*. The provisions of the Norris Act most likely to be effective, aside from more recent legislation, are those which affect the use of the yellow-dog contract.

[5] Sec. 77 of the Act, to be cited as U.S. Code, title 11, Sec. 205, paragraphs (*o*), (*p*), and (*q*).

"(*o*) No judge or trustee acting under this act shall change the wages or working conditions of railroad employes, except in the manner prescribed in the Railroad

Emergency Railroad Transportation Act of June 16th, 1933,[6] lifts these provisions bodily and provides that they are applicable to all carriers which are subject to the interstate commerce Act, as amended, "whether under control of a judge, trustee, receiver *or private management.*"[7]

So far the application of this language was limited to the employment of rail carriers, but the National Recovery Act of June 16, 1933, after providing for the establishment of codes of "fair competition," extends the operation of these principles to every code issued under the Recovery Act.[8] The language and its application seems specific,

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Labor Act. or as set forth in the memorandum of agreement entered into in Chicago, Illinois, on January 31, 1932, between the executives of twenty-one standard labor organizations and the committee of nine authorized to represent Class I railroads.

"(*p*) No judge or trustee under this act shall deny or in any way question the right of employes on the property under his jurisdiction to join the labor organization of their choice, and it shall be unlawful for any judge, trustee or receiver to interfere in any way with the organization of employes, or to use the funds of the railroad under his jurisdiction in maintaining so-called company unions, or to influence or coerce employes in an effort to induce them to join or remain members of such company unions.

"(*q*) No judge, trustee, or receiver acting under this act shall require any person seeking employment on the property under his jurisdiction to sign any contract or agreement promising to join or to refuse to join a labor organization; and if such contract has been enforced on the property prior to the property coming under the jurisdiction of said judge, trustee or receiver, then the said judge, trustee or receiver, as soon as the matter is called to his attention, shall notify the employes by an appropriate order that such contract has been discarded and is no longer binding upon them in any way."

[6] Sec. 7 (*e*): Carriers, whether under control of a judge, trustee, receiver, or private management, shall be required to comply with the provisions of the Railway Labor Act and with the provisions of section 77, paragraphs (*o*), (*p*), and (*q*), of the Act approved March 3, 1933, entitled "An Act to amend an Act entitled 'An Act to establish a uniform system of Bankruptcy throughout the United States,' approved July 1, 1898, and Acts amendatory thereof and supplementary thereto."

[7] Carriers defined as herein indicated, in the same Act, Sec. 1 (*d*) and (*e*).

[8] "(*a*) Every code of fair competition, agreement, and license approved, prescribed, or issued under this title shall contain the following conditions: (1) That employees shall have the right to organize and bargain collectively through representatives of their own choosing, and shall be free from the interference, restraint, or coercion of employers of labor, or their agents, in the designation of such representatives or in self-organization or in other concerted activities for the purpose of collective bargaining or other mutual aid or protection; (2) that no employee and no one seeking employment shall be required as a condition of employment to join any company union or to refrain from joining, organizing, or assisting a labor organization of his own choosing; and (3) that employers shall comply with the maximum hours of

but there is some uncertainty as to the extent to which the provisions of Section 7(*a*) will prove effective as a real safeguard of the freedom of workers to organize in the "open-shop" industries. These provisions were the principle obstacle to the adoption of the automobile manufacturers' codes, and there have been some notable holdouts in the canning industry for the same reason. If these provisions of Section 7(*a*) are in fact incorporated in the codes and if the codes are enforced, the yellow-dog contract is a dead issue as long as the codes remain in effect and as far as enforcement reaches down into industry;[9] but in

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labor, minimum rates of pay, and other conditions of employment, approved or prescribed by the President.

"(*b*) The President shall, so far as practicable, afford every opportunity to employers and employees in any trade or industry or subdivision thereof with respect to which the conditions referred to in clauses (1) and (2) of subsection (*a*) prevail, to establish by mutual agreement, the standards as to the maximum hours of labor minimum rates of pay, and such other conditions of employment as may be necessary in such trade or industry or subdivision thereof to effectuate the policy of this title; and the standards established in such agreements, when approved by the President, shall have the same effect as a code of fair competition, approved by the President under subsection (*a*) of section 3.

"(*c*) Where no such mutual agreement has been approved by the President he may investigate the labor practices, policies, wages, hours of labor, and conditions of employment in such trade or industry or subdivision thereof; and upon the basis of such investigations, and after such hearings as the President finds advisable, he is authorized to prescribe a limited code of fair competition fixing such maximum hours of labor, minimum rates of pay, and other conditions of employment in the trade or industry or subdivision thereof investigated as he finds to be necessary to effectuate the policy of this title, which shall have the same effect as a code of fair competition approved by the President under subsection (*a*) of section 3. The President may differentiate according to experience and skill of the employees affected and according to the locality of employment; but no attempt shall be made to introduce any classification according to the nature of the work involved which might tend to set a maximum as well as a minimum wage.

"(*d*) As used in this title, the term 'person' includes any individual, partnership, association, trust, or corporation; and the terms "interstate and foreign commerce" and 'interstate or foreign commerce' include, except where otherwise indicated, trade or commerce among the several States and with foreign nations, or between the District of Columbia or any Territory of the United States and any State, Territory, or foreign nation, or between any insular possessions or other places under the jurisdiction of the United States, or between any such possession or place and any State or Territory of the United States or the District of Columbia or any foreign nation, or within the District of Columbia or any Territory or any insular possession or other place under the jurisdiction of the United States."

[9] The "teeth" of the Recovery Act, in this connection, are found in Section 10:

"(*a*) The President is authorized to prescribe such rules and regulations as may be necessary to carry out the purposes of this title, and fees for licenses and for filing

the automobile code there is a reservation of the employer's "right to select, retain, or advance employees on the basis of individual merit without regard to their membership or non-membership in any organization." It is said that this reservation is intended to prevent misuse of the language of the code: to prevent inducement of workers to believe that the code *requires* every worker to join a union.[10] Such prevention doubtless will be a salutary effect of the reservation; but conspicuous publication of the language of the reservation may have one or both of two other effects: it may serve to sustain the belief in the worker's mind that "individual merit" will be adversely affected by membership or holding of office in a union; it may serve to retard organization by pointing out that membership is no guaranty of employment of any and all applicants or incumbents. Too, in spite of the statement that this reservation is not to be regarded as affecting the meaning of the Act, nor to be regarded as a precedent, it seems extremely likely that pressure will be exerted to get such a reservation into other codes and that something (little, perhaps) will be taken away from the meaning of the Act. On the other hand, there remains the guaranty of conference with employee representatives, chosen by employees, acting as freely as conditions will permit.

The Railroad Act contains two other provisions which may be of considerable significance to railroad workers. In Section 7(*a*) and (*c*) there is a provision for collective bargaining facilities. In Section 7(*b*) it is provided that the number of employees on railroads may not be reduced due to the authority of this Act, below the level of May, 1933, except by reason of death, resignation, or normal retirement.[11] The

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codes of fair competition and agreements, and any violation of any such rule or regulation shall be punishable by fine of not to exceed $500, or imprisonment for not to exceed six months, or both.

"(*b*) The President may from time to time cancel or modify any order, approval, license, rule, or regulation issued under this title; and each agreement, code of fair competition, or license approved, prescribed, or issued under this title shall contain an express provision to that effect."

[10] Report in *Chicago Tribune*, August 28, p. 1.

[11] SEC. 7. (*b*) The number of employees in the service of a carrier shall not be reduced by reason of any action taken pursuant to the authority of this title below the number as shown by the pay rolls of employees in service during the month of May, 1933, after deducting the number who have been removed from the pay rolls after the effective date of this Act by reason of death, normal retirements, or resignation, but not more in any one year than 5 per centum of said number in service during May, 1933; nor shall any employee in such service be deprived of employment such as he had during said month of May or be in a worse position with respect

labor chiefs, in dealing with Co-ordinator Eastman, have insisted that this provision applies to any and all reductions in the working force of the railroads; but Mr. Eastman has held that this provision does not apply to reductions "instituted in the ordinary course of management."[12] As the matter stands, it applies only to reductions brought about by reason of the carrying out of the other provisions of the Act. Judging from the language of the Act, the Co-ordinator's decision seems unquestionable, but the matter may prove to be of no practical importance, for the reason that it is quite probable that the reduction made "pursuant to the authority" of the Act may be covered by the normal turnover, due to retirements, deaths, and resignation, since the modal age is rather high in most branches of railway employment.

From Section 7(*d*) of the Railroad Act[13] railroad workers have been led to expect a great deal more than the specific language of the section justifies. The workers anticipate that this provision will be interpreted to cover real estate depreciations due to such causes as the removal or consolidation of railroad division points;[14] but the language of the Act does not specifically include such items.

The effectiveness of these provisions will depend, of course, as always, upon administrative policies and judicial interpretations. The validity of the punitive and licensing sections of the Act probably will be upheld;[15] but it is rather too early to regard the National Recovery Act as anyone's Magna Carta, even during the emergency.

NOTE: Since the above statement was prepared, certain attempts have been made to misuse the "merit" clause of the automobile code, applications for many

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to his compensation for such employment, by reason of any action taken pursuant to the authority conferred by this title.

(*d*) The Coordinator is authorized and directed to provide means for determining the amount of, and to require the carriers to make just compensation for, property losses and expenses imposed upon employees by reason of transfers of work from one locality to another in carrying out the purposes of this title.

[12] *Labor*, August 1, 1933, p. 1, referring to a decision of July 22.

[13] See note 10, *supra*.

[14] "No railroad worker needs to be told what a change this makes. The rule in the past has been to move the worker at the convenience of the company, and let him stand the loss. He may have built his home in a town that lived on railroad activities, a town that shrunk to a halfdead village when those activities were moved. He had no redress; on a few occasions have forced compensation, but as a rule the workers shouldered the loss. The new law recognized his right to compensation, and tells the Coordinator to get it for him." *The Railroad Telegrapher*, L, (July, 1933), 503. See also *Labor*, August 1, 1933, p. 1.

[15] One case is on its way through the courts. The Supreme Court of the District of Columbia has declined to issue an injunction to restrain the Secretary of the Inte-

new codes have asked insertion of similar clauses, and a number of "open shoppers" have asked that their codes be reopened so that they might insert similar language.

On September 6, General Johnson asserted that this clause had been permitted to go into the auto code "in an unguarded moment," and that he "will not approve another code containing this clause or any other language which can be construed as modification" of the law. He indicated, too, that the "merit" clause might be lifted out of the auto code at the end of ninety days when that code is due for revision; and he said again that the right of workers had not been modified in any particular by the use of the clause.

In addition to this, Co-ordinator Eastman has addressed the railroads in writing, to the effect that "managements must keep their hands off, so far as labor organizations are concerned," and specifically he has outlawed the company union on the railroads. (See *Labor*, Sept. 12, 1933, pp. 1 and 2.)

The President, on September 15, declined to recognize an agreement between labor leaders and the industrial board, "interpreting" Section 7 A of the statute. The President takes the ground that the act is in "very plain English," and that interpretations of it will be made only as specific cases arise.

Altogether, the legislation looks more like a Magna Carta than it did a few days earlier.

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rior from interfering with certain interstate oil shipments under the Recovery Act. Justice Cox said that Congress has declared that an emergency exists and has granted the executive powers to deal with the emergency. "In times of Emergency, even the Constitution is subject to the laws of necessity." Reported in *Labor*, August 22, p. 1. No reference indicates what sections of the Act were called in question, and no other report is at this writing available.

BOOK REVIEWS

100,000,000 Guinea Pigs—Dangers in Everyday Foods, Drugs, and Cosmetics. By ARTHUR KALLET AND F. J. SCHLINK. New York: The Vanguard Press, 1932. Pp. xi+312.

This book was written to arouse the public to the dangers to which it is needlessly subjected through the weakness and ineffectiveness of the food and drug laws and their administrators. The publishers are already claiming the credit for the new administration bill making some greatly needed changes in the federal act.

The book raises some troublesome questions for those who are aware of the consumer's buying problem under present market conditions, who desire more effective protection than the law now affords but who at the same time have a regard for exact statement and fairness in judgment. It must be recognized that without the activities in recent years of Mr. Schlink and Mr. Kallet few would understand or be concerned about the consumer's problem and very little in a practical way would have been done toward its solution. The troublesome question is, Could the public have been aroused, and needed reforms instituted by painstaking efforts to tell the whole truth and nothing but the truth? Can propaganda, in other words, be effective without distortion, exaggeration, and significant omissions? Could the cautious generalizations and the scrupulous understatements of the scientists ever elect candidates, effect legislative changes, or sell goods? The academic profession knows well the scorn of journalists, advertisers, and "crusaders" for their tendency to qualify and their ofttimes designedly colorless pronouncements.

100,000,000 Guinea Pigs is unquestionably effective propaganda and good journalism by the most widely accepted canons. Is it equally sound from the standpoint of scientific fact? Are its implications and conclusions well sustained?

Page after page must be called special pleading. The person whose field of knowledge is touched by the discussion wishes again and again to call the reader's attention to additional considerations, to expunge unfair statements, to draw somewhat different conclusions, to make less sweeping generalizations. For example, it might be noted that beef

and mutton fat have higher melting points than Crisco and that one might with their argument (p. 25) ban lamb chops as well as potatoes fried in Crisco from the diet. It might be argued that the gratuitous slur (p. 145) on the Children's Bureau for failing to mention the danger of impure ergot in its bulletin on pre-natal care is most unfair, that in spite of this omission this bulletin has been of inestimable value in safeguarding the health of mothers and infants. It may also be argued that there is insufficient evidence for the statement, following an enumeration of symptoms found in all cases of sub-adequate nutrition, "It is certain that many of these obscure types of illness are due to poison in food and in drugs" (p. 11). One may also question the accuracy of this statement, "A large proportion (of the materials used by commercial bakeries) are dangerous to health" (p. 36), and of this "A tremendous burden of disease and suffering, the loss of thousands upon thousands of lives each year, and economic losses running to billions of dollars—this is the toll being paid today by 125,000,000 Americans for the ignorance, the indifference and the avarice of the manufacturers of food and drugs, and for the laxity of government officials" (page 251).

A more general criticism of Mr. Schlink's and Mr. Kallet's brief is that there is insufficient discrimination between dangers possible and dangers proven, between dietary difficulties due to ignorance of nutrition and to long established food habits and those due to adulteration and the manufacturer's avarice, between inadequacy in the substantive and remedial provisions of the law and the temper and capacity of its administrators. For example, Mr. Schlink and Mr. Kallet dislike canned, dried, smoked and frozen foods and believe they should have only a limited place in the diet. But how complete is the case against these foods? Are they "nasty" and unwholesome? And is the use of these methods of preservation to be ascribed wholly to the avarice of the manufacturers?

Is the book wholly inaccurate? By no means. The most careful student can find no fault with a great deal of it and can pay tribute to the penetration and fact-finding ability of the authors. The criticism that has been made is not for outright error or falsity but for its half-truths and misleading statements. Its fault in other words is that found in practically all modern sales-talk and advertising. Just as the manufacturers "in the magazines, in the newspapers, over the radio—set in motion a host of fears" in order to sell their goods so do these authors in order to institute greatly needed reforms. Advertisers and manufacturers will find here a clever use of their own tactics—not for

private gain however but for the public good. And if the end is good, and the reviewer for one believes that it is, shall we criticize the means? That is the troublesome question.

HAZEL KYRK

UNIVERSITY OF CHICAGO

Price Fixing in New Zealand. By WILLIAM BALL SUTCH. Columbia University Press, 1932. Pp. 164. $3.00.

With the current discussion on governmental raising of prices of farm products, not to mention other suggestions for "inflation" or tinkering with interest rates, any book on price fixing is certain to attract attention. But as a help in our present economic straits *Price Fixing in New Zealand* is unsatisfactory because (1) it deals only with problems arising out of the World War and the readjustment immediately following, when the difficulties were of rapid enhancement of prices due to demand far outrunning supply, and (2) it tends to be explicit on the specific problems of that period and the measures taken to meet them rather than treating price fixing in its broader and more applicable phases.

This latter fact suggests the chief value of the work, namely, that of briefly presenting the issues, the measures adopted, and the results of the price fixing activities of New Zealand during the war period. Precise price and quantity data are given at various points. The chief attempts at control were for sugar (a virtual monopoly situation), butter, building materials, and wheat—where maximum prices were fixed with a view of preventing "exploitation and profiteering." However, in actual practice ". . . . it may be said that the price fixed depended on the influence the producer had with the Government" (p. 138). The necessary rationing of building materials, the government standards for manufacture of cheap footwear, and the temporary price fixing of other commodities are also considered.

WM. H. NEWMAN

UNIVERSITY OF CHICAGO

Economic Stabilization in an Unbalanced World. By ALVIN H. HANSEN. New York: Harcourt, Brace & Co., 1932. Pp. 384. $2.50.

Any business man or student of economic problems should find part, if not all, of this book of interest and value. Some chapters are descrip-

tive, dealing with such things as the Bank of International Settlements, war debts, unemployment, or state control of housing; others give analyses of recent economic changes; and still others indulge in a more or less theoretical interpretation of existing or proposed modifications of a laissez faire competitive system. The book is, however, a collection of chapters or thoughts on "economic stabilization in an unbalanced world" rather than a systematic treatise on either stabilization or unbalancing elements in our economic world. In his Preface the author himself suggests the possible desirability, for certain readers, of judicious omissions.

The book is divided into four parts. The first part treats of "international causes of instability," and very ably presents some of the major factors of disequilibrium in the last decade. The emphasis is definitely and explicitly on international factors. This emphasis gives the section distinctive merit for American readers, since much of our thinking, certainly during the latter twenties, was permeated with an American provincialism which failed to give adequate weight to world-forces that are playing such a vital rôle in the present catastrophe.

The second part is concerned with unemployment. Following a summary of unemployment statistics of the leading industrial countries, the causes and proposed remedies are considered. This short and penetrating treatment is delightfully clear in bringing out most of the basic economic aspects of the problem. Typical of the rather patchwork nature of the whole book, part of the discussion on technological unemployment goes into detail far out of keeping with the rest of the volume. Part III, on population, is again an admirable and relatively concise statement; but important as this problem may be in other connections, the justification for giving it a whole section in a book on economic instability is by no means clear.

The last section, Part IV—"Toward a Stabilized Capitalism?"—contains some very stimulating discussion on stabilization, but leaves the query of the title unanswered. Consistent with his belief that "the appropriate tools of control have . . . . not yet been devised or perfected . . . . ,"[1] the author has no new constructive suggestions to offer. An outstanding theme of this section is that "by its very nature a highly stabilized economic society could not be a highly dynamic and progressive society."[2] Most satisfactory to the reviewer were chapters xviii–xx, which treat the problem of price stabilization with character-

[1] Preface, p. vii.

[2] P. 321.

istic penetration and clarity. The (naïve) believer in price stabilization as the panacea for business fluctuations should read and re-read these chapters.

WILLIAM H. NEWMAN

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Introduction to Principles of Accounting. By H. A. FINNEY. New York: Prentice-Hall, Inc., 1932. Pp. xv+649. $5.00.

A standing controversy has existed for years among teachers of accounting over whether it is necessary for students in an introductory course in accounting to master all of the techniques for keeping accounting records in order to grasp the principles of accounting. Of recent years a compromise seems to be developing. For those students planning to specialize in the study of accounting, an introductory course is given which involves a thorough drill in the processes of bookkeeping. For other students who wish only an explanation of accounting principles and procedures and who have no need of an ability to handle every situation that might arise in keeping accounting records, a different type of course is offered.

Introduction to Principles of Accounting is admirably suited for use in the former type of course, where the student is given a rigorous training in the procedures of keeping accounts. The explanations and instructions for every phase of record-keeping are detailed, complete, and reliable.

There are certain features of the book which differentiate it from most predecessors. From the opening pages the corporate form of business organization is used, with capital stock and surplus as net worth accounts. Within the first three chapters the student covers a complete cycle of bookkeeping procedure as a preface to a more thorough explanation in succeeding chapters of each of the steps in the cycle. In this preliminary cycle, using for its example a non-merchandising business, no adjustments at the end of the accounting period are introduced to bewilder the student. A third feature, concerning which the author did not comment in his Preface, is the use of working papers in practically every chapter, starting with chapter iii and ending with chapter xx. This is a much earlier and more thorough use of working papers than customary, which seems to the reviewer in keeping with the aim of the book.

In the early chapters, where the student receives his first concepts, the subject of accounting is introduced in sentences that are simple, clear, and to the point—almost terse. However, these sentences com-

pose a manual of instructions, definitions, and rules instead of a logical explanation of why accounting procedures are what they are. There is needed more of the essence of logic. For example, the similarity between liabilities and net worth—the fact that both are statements of ownership in the assets—is scarcely mentioned, whereas it should be emphasized and made the basis for explaining many of the underlying procedures of accounting early in the course.

The author's admittedly arbitrary stand on many points where alternative procedures are possible, in order not to confuse the student, should be mentioned. In the later chapters of the book, where principles of valuation are intermingled with detailed bookkeeping instructions for different groups of assets, liabilities, and net worth, this arbitrariness is perhaps less justified than in the earlier chapters.

Throughout the book the questions at the end of each chapter are very good, and raise issues which have been omitted in the text. The problems accompanying the first eleven chapters require the student to accomplish a complete cycle of bookkeeping—sufficient repetition certainly to teach him the subject. Never in the reviewer's knowledge has any introductory book on accounting given such complete instruction in the use of special books of original entry. The use of these special books, even for illustrating the discussions of alternative procedures of accounting, makes the study of these alternatives much more burdensome than if general journal entries had been used.

The later chapters of the text give very complete discussions of bookkeeping procedures for almost every phase of accounting. These chapters should be useful as references in connection with other courses in accounting, or for occasional review purposes. A comprehensive practice set accompanies these chapters.

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Voluntary Allotment (*Planned Production in American Agriculture*). By EDWARD S. MEAD and BERNHARD OSTROLENK. Philadelphia: University of Pennsylvania Press, 1933. Pp. 147. $1.50.

Voluntary Allotment is a sequel to *Harvey Baum* (1928) in which it was argued that farm relief was largely an illusion. In *Harvey Baum* the authors maintained that "American farming in its present form cannot be saved" (p. 147). In *Voluntary Allotment* they proceed to save it. Five years ago the surplus farmer could go to the city, and in *Harvey Baum* he was told to go there. But now that refuge is gone and a new solution must be found.

Messrs. Mead and Ostrolenk hold that the agricultural industry may be stabilized either by farm attrition or by controlled production. "Farm attrition" was the keynote of *Harvey Baum*, while the keynote of *Voluntary Allotment* is "controlled production." "If the farmer's economic position is to be improved by advancing prices, the supplies of farm products must be reduced" (p. 80). It follows that "if his production is to be reduced, the farmer must clearly see that a reduction is to his advantage. He cannot be bullied, coerced, or persuaded, as a group, to do the only thing that will save him—reduce his crops. . . . . He is looking out for himself at all times and he is naturally unwilling to reduce his acreage of wheat or corn without some definite assurance that other farmers will do likewise. This assurance can be given him only by offering to everyone in the farming industry a direct money payment for crop reduction" (p. 82).

With this attitude of mind the authors consider the matter of repealing the ancient and venerable law of "supply and demand." They hesitate to recommend such violent action but it must be done. "We are therefore forced . . . . to add another price fixing device—to utilize the bad situation as well as may be in the interests of the country" (p. 95).

The voluntary-allotment plan is to do the trick. The American farmers cannot, "unless the Constitution is overthrown, be forced into a program of planned production and orderly marketing. They must be paid to accomplish their own salvation. The rest of us must furnish the money. While Mussolini and Stalin issue orders, Roosevelt offers inducements" (p. 102). The scheme is simply this: Farmers are to be told that if they will reduce their production to their allotment as determined by a federal allotment board for each commodity, they will be given allotment certificates of sufficient value to bring the price of the commodity "sufficiently high to cover the cost of production plus a profit" (p. 107). The mechanism of the plan need not be further considered.

The voluntary-allotment plan as here worked out is claimed to meet all of Mr. Roosevelt's specifications as given in his Topeka speech, except as regards dumping. "Dumping," according to the authors, "is the sale abroad at lower prices than at home—exactly what is contemplated in the Voluntary Allotment plan" (p. 115). The authors' voluntary-allotment plan also assumes that "the entire increase in farm prices should be shifted to the consumer" (p. 126). The authors think that consumers should accept this burden in their self-interest, for the indirect advantages to business prosperity are expected more than to meet the direct cost.

The difficulties of the voluntary-allotment plan are minimized. The authors do not seem entirely sincere. They seem to say "Take it," but one is not sure. The book closes with this sentence: "It may be that out of the long and fruitless struggle of the farmer against natural law will come what the nation is anxiously groping after, a workable plan of economic balance and controlled production."

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Communication Agencies and Social Life. By MALCOLM M. WILLEY and STUART A. RICE. New York: McGraw-Hill Book Co., 1933. Pp. xv+229. $2.50.

This is one of a series of monographs prepared under the direction of President Hoover's Research Committee on Social Trends. Communication agencies are distinguished as transportation agencies; agencies of point-to-point communication such as the postal service, telegraph, telephone; and agencies of mass impression such as the newspaper and periodical, the motion picture, and radio. The facts with regard to the use of these different agencies over approximately the last three decades are told, the method being mainly statistical.

The authors purport to give information on how the use of these agencies has influenced human habits, but from this angle the book is disappointing. One is met with such statements as "Effects of individual or mass travel upon attitudes and ideas cannot be accurately ascertained"; "The effects upon the individual of the elaboration of facilities that has been traced can only be suggested."

The reader finds himself asking: What are the social and economic problems of society which have created the need for these specialized communication agencies? What have been the effects of all this moving about, this talking over telephone and radio, this reading of newspapers and periodicals upon the growth and dissemination of ideas? These questions the authors do not answer as satisfactorily as they might have done if the emphasis had been shifted from a factual to an interpretative approach.

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LIST OF BOOKS RECEIVED FOR REVIEW

HENRY C. METCALF, Ed. *Scientific Foundations of Business Administration*, Baltimore: Williams & Wilkins Co. $5.00.

T. CONYNGTON and LOUIS O. BERGH, *Business Law*. Third Revised Edition. New York: Ronald Press. $3.50.

H. H. MAYNARD, W. C. WEIDLER, and K. D. REYER, *An Introduction to Business Management*. New York: Ronald Press. $3.75.

A. M. ANDREADES, *A History of Greek Public Finance*, Vol. I. Harvard University Press. $6.00.

RUTH M. KELLOGG, *The United States Employment Service*. University of Chicago Press. $1.00.

FRANK T. CARLTON, *Labor Problems*. D. C. Heath & Co. $2.60.

H. A. FINNEY, *Introduction to Principles of Accounting*. Prentice-Hall. $5.00.

J. G. GLOVER and W. B. CORNELL, *The Development of American Industries*. Prentice-Hall. $5.00.

HENRY S. MCKEE, *Degenerate Democracy*. Thomas Y. Crowell Co. $1.50.

BESSIE LOUISE PIERCE, *Citizens' Organizations and the Training of Youth*. Charles Scribner's Sons. $2.00.

FRANK D. GRAHAM, *The Abolition of Unemployment*. Princeton University Press. $2.00.

C. H. COOLEY, R. C. ANGELL, and L. J. CARR, *Introductory Sociology*. Charles Scribner's Sons. $3.50.

HARRY F. WARD, *In Place of Profit*. Charles Scribner's Sons. $2.50.

H. J. THORNTON, *The History of the Quaker Oats Company*. University of Chicago Press. $3.00.

HENRY C. METCALF, Ed., *Personnel Administration: A Bibliography*. Human Relations Series, I. Williams & Wilkins Co. $5.00.

J. G. SMITH, Ed., *Facing the Facts*. G. P. Putnam's Sons. $3.00.

E. E. GARRISON, *The Riddle of Economics*. Macmillan Co. $2.50.

J. S. DUNCAN, *Public and Private Operation of Railways in Brazil*. Columbia University Press. $3.75.

JOHN H. FREDERICK, *The Development of American Commerce*. D. Appleton & Co. $3.00.